

CHIROPRACTIC GYNECOLOGY

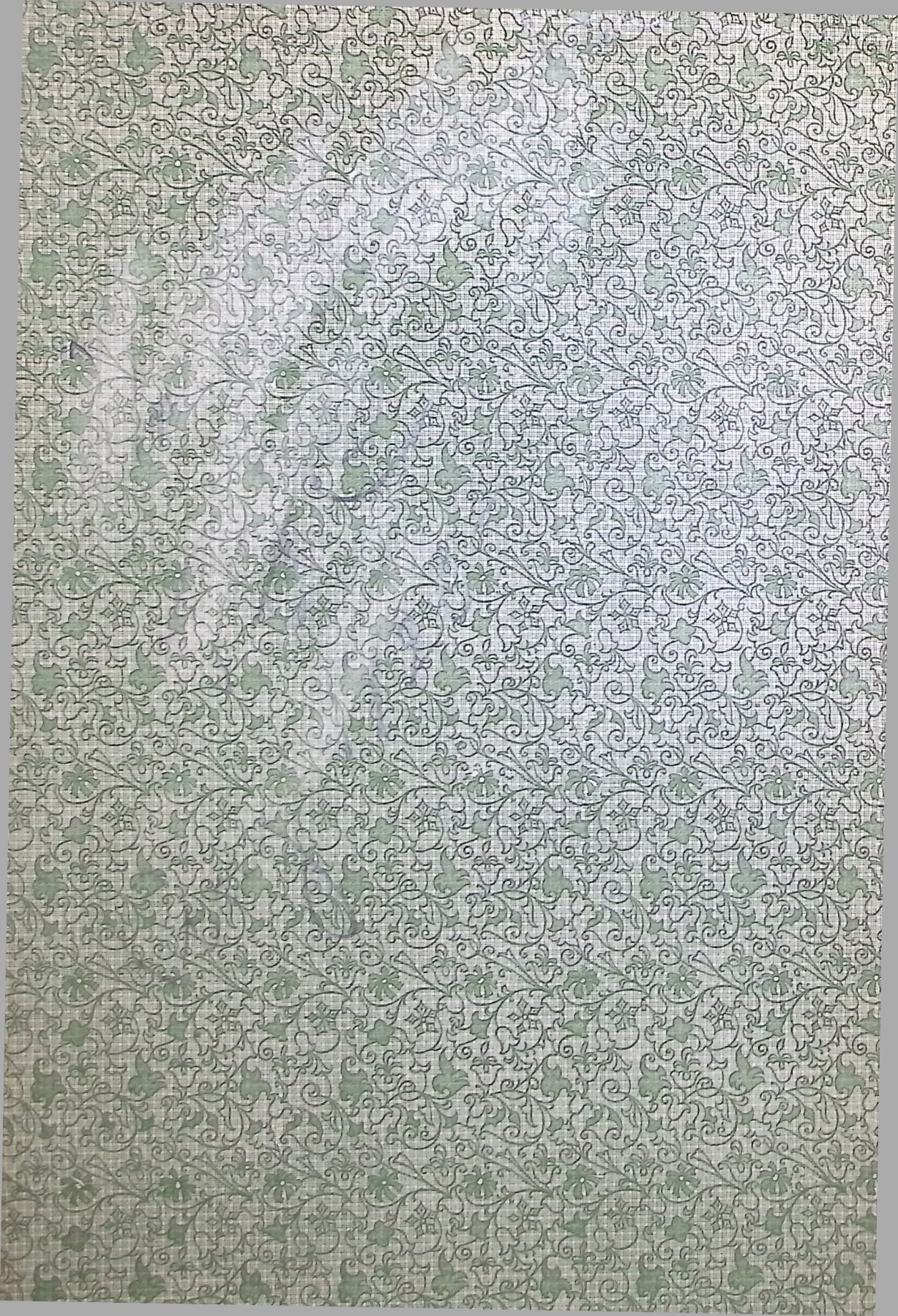
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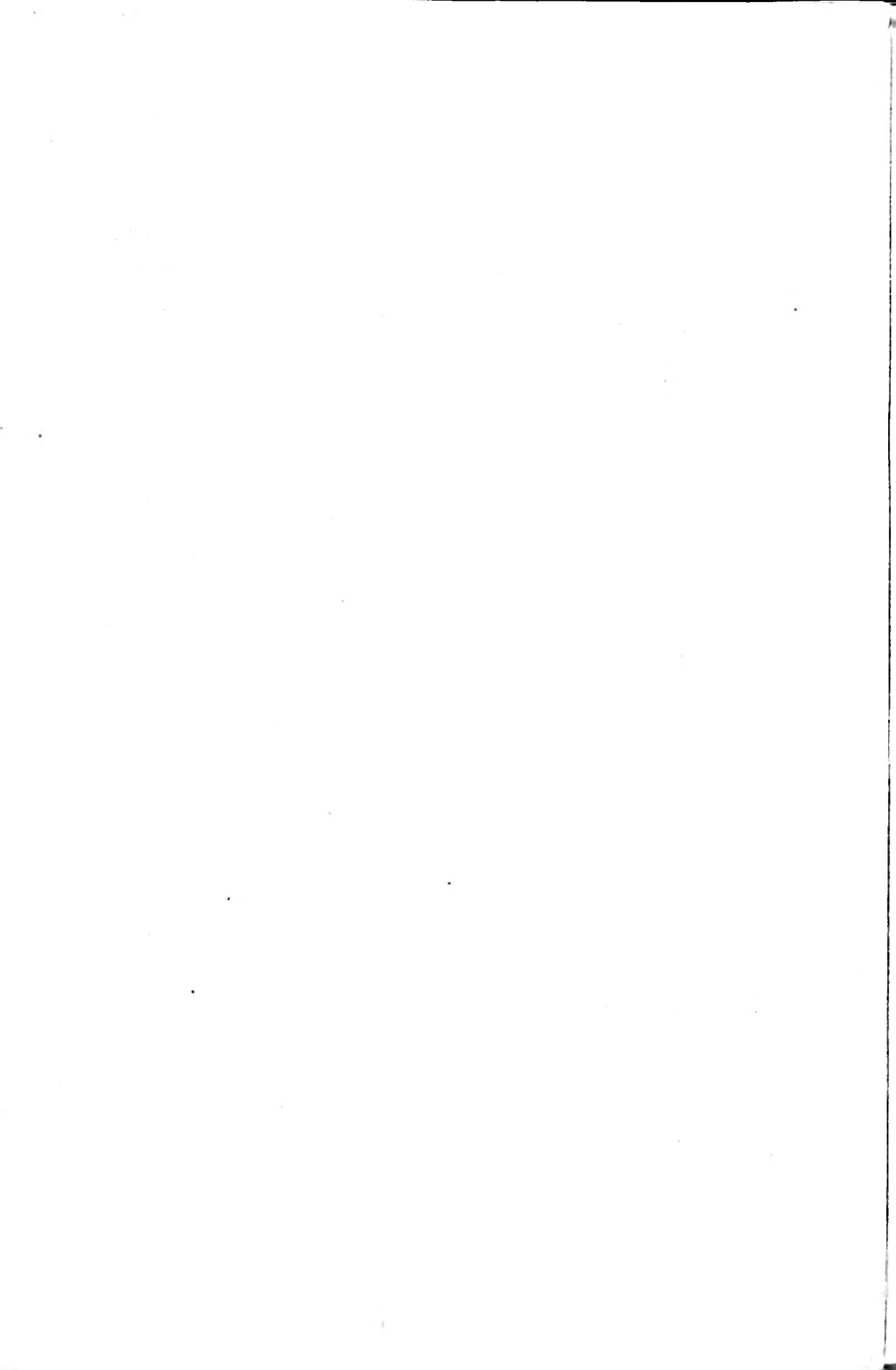


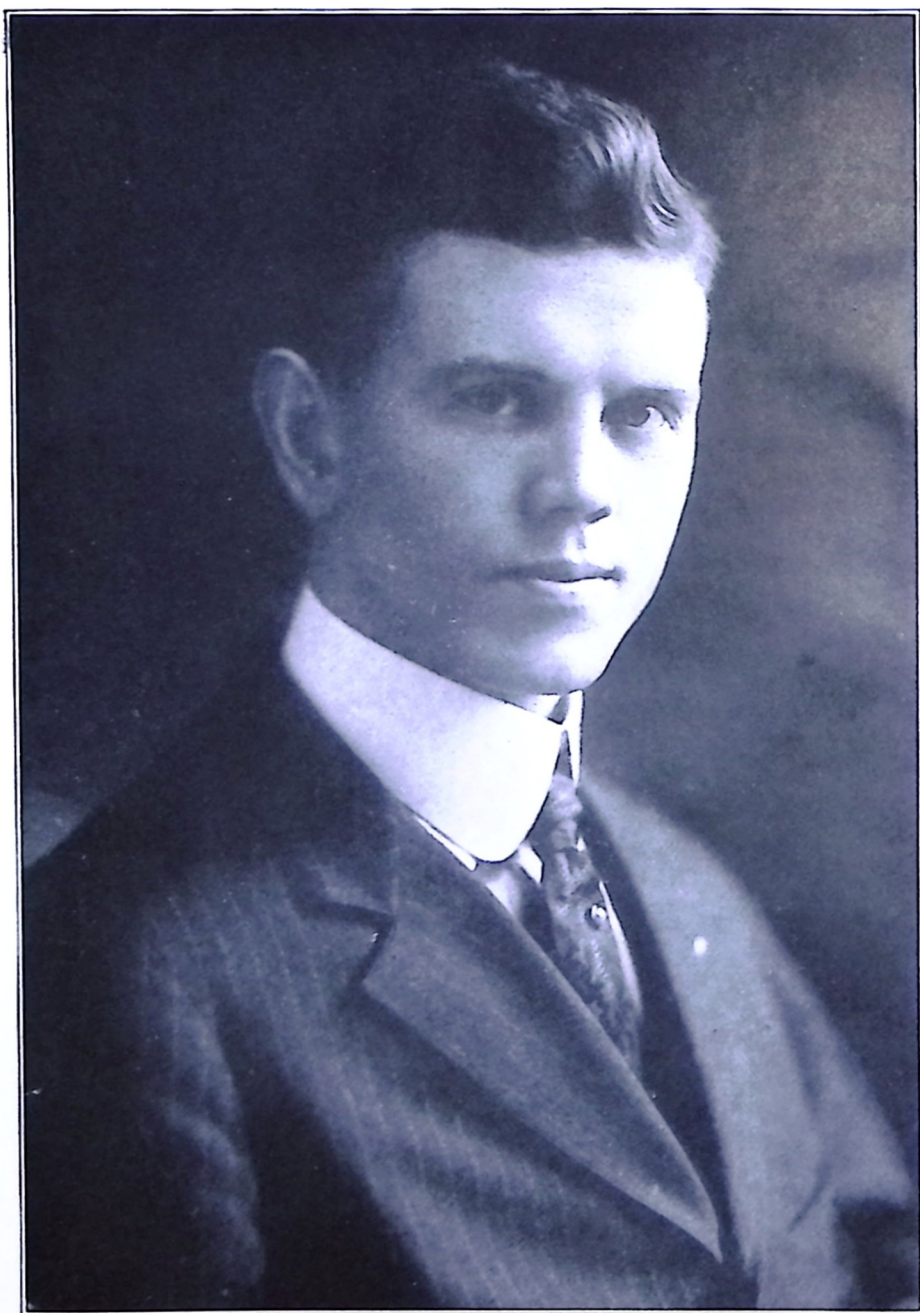


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Harry E. Vedder, D.C. Th. C.

A TEXT BOOK
ON
CHIROPRACTIC GYNECOLOGY

BY
HARRY E. VEDDER, D. C., Ph. C.
PROFESSOR OF GYNECOLOGY IN THE PALMER
SCHOOL OF CHIROPRACTIC

FIRST EDITION

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HARRY E. VEDDER, D. C., Ph. C.
DAVENPORT, IOWA, U. S. A.

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DEDICATION

Throughout my years of service in the Faculty body of the Palmer School of Chiropractic I have had one staunch and steadfast friend; one to whom I could go with my difficult problems and be assured of advice and co-operation born of real sincerity. Because of these many pleasant occasions and the influence for good it has had in my life, I take pleasure in dedicating this book to M. H. Palmer, D. C., Ph. C.

HARRY E. VEDDER, D. C., Ph.C.

*Sincerely Yours,
Harry E. Vedder.*

*Passed away Aug - 18 - 49
Dr J. C. C.*

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PREFACE

In the different methods which have been inaugurated during the past few years, all of which strive to restore health, the word "Chiropractic" has become a magic word. Because of the world wide success of this science many other methods and systems have tried to enlist under its banners and parade as a part of this wonderful system.

Chiropractic is, always has been and always will be, based on the foundation of natural laws; the cause of disease being found in subluxations of the spine and relieved by the adjustment of those subluxations. That is Chiropractic in its simplicity, unadorned by other methods calculated to inspire in the public mind an idea of intricacy and complication. Anything added to this basic foundation is not Chiropractic and any book which teaches methods of procedure which do not conform to this basis is not truly a Chiropractic production.

The author has felt for many years that a strictly Chiropractic book on the subject of Gynecology was a real necessity. What other authors had written mattered little, because they had all left out the essential element that was necessary in a Chiropractic publication. Looking at the problem from the standpoint of the field Chiropractor and the student of Chiropractic, he saw that the essential elements required were a statement of the cause of the disease; a thoroughly Chiropractic explanation of that cause and the results that might be expected under adjustments.

These three factors have been incorporated in every disease considered, and it is with the sincere hope that this publication fills a long felt need in the Chiropractic world that this book has been produced.

HARRY E. VEDDER, D. C., Ph.C.

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CHAPTER I

ANATOMY OF THE FEMALE GENERATIVE ORGANS

The generative organs of the female are divided into two main divisions, known as the external and the internal.

External Organs:—The subdivisions of the external organs are: Mons Veneris, Labia Majora, Labia Minora, Clitoris, Vestibule, Glands of Bartholin and the Vaginal Bulb. These external organs constitute the vulva.

The Labia Majora are two folds of tissue which enclose the other parts of the external organ. They are somewhat thicker behind than they are toward the anterior and the space which they enclose is known as the genito-urinary space. The labia majora is possessed of two surfaces, an outer and inner. The former is covered with integument possessing numerous glands principally of the sebaceous type and many hair follicles which accommodate hairs that are rather short and coarse. The inner surface is lined with mucous membrane, which is a continuation of the mucous membrane found lining the urinary and genital tracts. The bulk of the labia majora is made up of a connective tissue of the areolar and adipose types and in the anterior part there is the termination of the round ligament of the uterus.

At the anterior, the two labia majora are joined and the point of union forms what is commonly known as the anterior commissure. This anterior commissure forms an eminence which is known as the mons veneris which lies immediately over the pubes. Toward the posterior, the two labia majora join to form the posterior commissure which is a transverse

fold between the posterior opening of the vagina and the anterior opening of the anus. This space between the two openings is about one inch in length and is known as the perineum, covered over by integument very similar to that found in other parts of the body.

The nymphae or the labia minora are similar to the labia majora, except that they are smaller and narrower than are the latter, but in general contour they possess the same arrangement. They are, however, entirely covered by mucous membrane which possesses some of the characteristics of integument. The posterior union of the labia minora is known as the fourchette or the frenulum, and at the anterior union the small lips are divided into two divisions, one of which lies below the clitoris and is known as the frenulum-clitoridis, while the other covers the clitoris and is known as the prepuce. These two labia minora lie in contact with one another, parallel to the labia majora, and the mucous membrane with which they are covered contains many sebaceous glands. The opening between the two labia minora is known as the vestibule.

The vestibule between the labia minora encloses several structures; the external opening of the urethra, the opening of the vagina, the openings of the two ducts of Bartholin, and the fossa navicularis, which is the name given to that part of the vestibule which lies between the vaginal orifice and the fourchette. The opening from the urethra is found immediately in front of the vaginal opening and about one inch posterior to the glans-clitoridis. There is somewhat of a slight elevation of the mucous membrane around the opening and occasionally there may be seen at the side of the meatus the minute opening from the para-urethral gland. Behind the urethral opening is the external opening of the vagina and the appearance of this external opening depends very largely upon the appearance of the hymen if it is present. The hymen is a membrane which is found across the external opening and is extremely variable in shape and appearance. The most com-

mon form is that wherein it discloses itself as a ring, the borders of which are attached to the vaginal wall. This ring is broader at the posterior than at the anterior. Occasionally the hymen is cribiform, due to many minute openings and in very rare cases it is impervious and shows no perforations whatever.

The clitoris in the female is homologus with the penis in the male, but differs from the latter in that it does not possess the urethra. Located between the two layers which constitute the anterior union of the labia minora, it is sometimes completely hidden from view, due to the fact that it is entirely covered by the prepuce. As a rule, however, the prepuce covers only the body while the glans-clitoridis is left exposed. The descriptive parts of the clitoris are: The two crura, the body and the glans. These crura project toward the anterior and superior, one on each side of the median line, where they form an attachment to the tissues immediately over the pubic arch. They join at the inferior and form the body of the clitoris which is composed of two corpora cavernosa. These two divisions are flattened on one side and convex on the other and are separated by a septal wall of connective tissue. The two of them together constitute the body of the clitoris, which is cylindrical in shape and tapers more or less toward the glans-clitoridis. The glans-clitoridis is a mass of connective tissue, located at the apex of the body and is so named from its resemblance to an acorn. Because of its size, being greater in diameter than that of the body at its point of attachment, it forms a rather bulbous end of the clitoris. The entire clitoris is composed of connective tissue which is extremely erectile. In fact, this is the most erectile of all the organs of the female tract. Erectility in any organ is the result of the ability of the blood vessels in that organ to dilate to a marked degree and allow for the accumulation of large quantities of fluid. This is brought about by the relaxation of the circular muscular fibers in the walls of the arteriole so that the pres-

sure in the arteriole system is in a large measure transmitted to the capillaries and the venules.

The glands of Bartholin are also known as the glands of Duverney and as the vulvo-vaginal glands. They are located one on each side and in the posterior wall of the vagina. Of a yellowish red color, they are round in shape and from one-half to three-quarters of an inch in diameter. Each of these glands is drained by a duct which empties immediately external to the hymen in the vagina.

The vaginal bulb is composed of two divisions or halves lying one on each side of the vaginal canal and near to its external opening. Each half is thicker toward the posterior than toward the anterior, where a union is made to form the pars-intermedia. The entire structure is formed of connective tissue of the erectile variety.

The Internal Organs—The internal organs of the female are: The vagina, the uterus, the fallopian tubes, the ovaries and the ligaments which serve to support these structures.

Extending from the external generative organs to the uterus is the vaginal canal, which is situated immediately behind the bladder and the urethra and in front of the rectum. It extends from its external opening toward the superior and the posterior, although it is somewhat curved with the concavity of the curve toward the anterior. Usually the walls of the vagina lie in contact with one another, with the anterior wall against the posterior wall, forming the transverse bar of a letter "H" while the lateral walls form the two parallel bars. About two and one-half inches in length on its anterior wall, it is about three and one-half inches in length on its posterior wall, because the latter extends around and encloses the cervix of the uterus which joins with the vagina at its upper extremity. The canal is somewhat smaller at its external opening than at the uterine end, while in the center it discloses a slight dilatation. The posterior wall of the vagina extends

further upward on the posterior wall of the cervix than does its anterior wall.

The axis of the vagina is not parallel to the axis of the uterus, but it forms with the latter an obtuse angle. While the axis of the vagina extends upward and toward the posterior, the axis of the uterus extends upward and toward the anterior. The obtuse angle is formed at the union of the two. The vaginal fornix is the name given to that space found between the outer mucous covering of the cervix and that part of the vaginal lining which encloses the cervix. It is divided into the anterior, the posterior and the lateral fornices; the posterior being deeper than either of the anterior or lateral, due to the fact that the vaginal wall extends higher on the posterior surface than it does on the anterior.

The vaginal wall is composed of three coats, the internal one being known as the mucous coat; the middle one as the connective tissue or erectile coat; while the outer one is known as the muscular coat.

The mucous membrane is continuous with the mucous lining of the vulva and the uterus and there is found along the posterior wall a longitudinal ridge which is known as the rugous column. The rugous column is also seen on the anterior wall, although not as distinct as that on the posterior. Extending from these ridges or rugae are transverse ridges which extend part way around the circumference of the vagina. Extending through these rugae are grooves or depressions which serve to divide them, and as a result the inner surface of the vaginal lining has the appearance of being studded with numerous papillae. The epithelial lining is of a stratified, squamous type and it is placed upon a loose connective tissue which constitutes its base. This connective tissue really forms a part of the erectile coat and it is impossible to draw a distinct line of demarcation between the internal and the middle vaginal coats.

The middle coat of the vagina consists, as we have said,

of erectile tissue formed of a loose areolar membrane which contains a great number of very large veins and capillaries with which are mingled some muscle fibers derived from the muscular coat.

The muscular coat consists of two layers of non-striated muscle fibers, the outer of which are arranged in a longitudinal formation, while the inner fibres are arranged in a circular direction. This external layer is heavier and stronger than the inner layer and the fibers of it are directly continuous with the external muscular fibers of the uterus. The two layers intermingle in some degree and it is impossible to distinguish a definite line of demarcation between them. The circular layer possesses the greatest number of fibers at the lower end of the canal, where these fibers form the sphincter vaginae. Surrounding the muscular coat is a comparatively unimportant layer of connective tissue which serves to unite the vagina with the surrounding structures.

The uterus is a hollow muscular organ and is known as the principal organ of gestation. It receives, retains and supports the ovum after it has been impregnated and by its muscular activity serves to expel the fetus at time of delivery. The uterus is contained in the cavity of the pelvis and lies between the bladder at the anterior and the rectum at the posterior. It usually inclines somewhat toward the left side of the median line even in the normal state. The walls of which the organ is formed are composed principally of muscular fibers and are extremely thick. Because of its attachments and supports, the uterus is more or less movable in its general position, while it permits of some degree of variation in its relative position with the cervix. The cervix is more firmly anchored than is the body and as a consequence is not as freely movable and its position is not as variable. Normally the uterus is bent and tipped somewhat toward the anterior so that it discloses a concavity on its anterior surface and its long axis extends toward the anterior and superior, thus mak-

ing an obtuse angle by its union with the vaginal axis. The uterus is somewhat changed by alterations in the surrounding structures of the pelvis, particularly the bladder and the rectum. If the bladder is distended the uterus is forced to assume a more vertical position while the curve on its anterior surface is lessened in degree. If the bladder becomes extremely distended, the entire uterus may be forced backward so that its axis is practically parallel with the axis of the vagina. Over-distention of the rectum also pushes forward on the cervix and serves to force the uterus to assume a more vertical position in the pelvis. In either of these changes the uterus may be said to be retro-verted or retro-flexed, while in the normal state it shows a degree of antiversion or antiflexion. The external os is found at about the level of the superior border of the symphysis pubis.

In the virgin, the uterus is a pear-shaped organ, somewhat flattened from anterior to posterior and held in its normal position by the round ligaments and by the broad ligaments. It is also supported by the vaginal floor and by the retention influence that is exerted by the surrounding viscera. The neck extends into the cavity of the vagina and is enclosed by its walls. The base of the uterus extends toward the superior and the anterior, while its narrow neck or apex projects backward and toward the inferior. The organ is about three inches in length, about two inches in width and about one inch in thickness, and its weight varies from one to one and one-half ounces. It is divided for convenience into two descriptive parts, the upper one of which is composed of the dilatation known as the body and the fundus, while the lower end is known as the cervix.

The extreme end of the uterus is very broad and constitutes the fundus which is distinguished from the body by an imaginary line drawn between the two uterine openings of the fallopian tubes. That part of the uterus which is above this line is known as the fundus, while that which lies below

it is known as the body. There is no distinction, so far as the structure of the wall is concerned, between these two divisions. The body is continuous with the fundus and viewed from the anterior or the posterior, it discloses a triangular outline with the base at the superior and the apex at the inferior. The entire uterus is covered by the peritoneum and this peritoneum on the anterior surface extends down as far as the union between the body and the neck where it leaves the wall of the uterus and extends forward to the wall of the bladder. Thus, there is a sack or pouch formed between these two hollow viscera which is known as the utero-vesical pouch. On the posterior wall, the peritoneum extends downward to the lower extremity of the uterus and for a short distance over the vaginal wall, where it is reflected backward toward the rectum and covers its anterior wall. Thus a pouch is formed here which contains some of the convolutions of the small gut. This pouch which is formed at the posterior is known as the Culdesac of Douglas. The anterior surface of the uterus shows a concavity from above downward, while the posterior surface discloses a convexity from above downward and from side to side. The lateral margins each show a convexity from above downward.

The neck or the cervix is the lower division of the uterus and is enclosed by the vaginal wall. This vaginal wall extends higher on the posterior surface than it does on the anterior. That part of the cervix which is found above the line of union with the vaginal wall is known as the supra-vaginal portion while that which is found below the union is known as the infra-vaginal portion. The supra-vaginal portion of the cervix is not covered on its anterior surface by the peritoneum because the reflection of this membrane is affected at the point of union between the body and the neck. The posterior surface is entirely covered by the peritoneum which extends down to and over the vaginal wall for a short distance before it is reflected back to the rectum. The infra-vaginal division of

the cervix is composed of the lower end which extends into the vaginal canal. At the lower extremity of this infra-vaginal portion is the external opening which is known as the external os and serves as a communication between the canal of the cervix and the vaginal canal. This opening may be either circular or linear. The former is most apt to be present in nullipara while the latter is usually found in women who have borne children. The margins are also smoother before the woman has borne children, while they are somewhat rough after a delivery.

The ligaments of the uterus are eight in number, three of them being arranged in pairs and two singly. The single ligaments are known as the anterior and the posterior, while those which are arranged in pairs are known as the round ligaments, the broad ligaments, and the sacro-uterine ligaments.

The anterior ligament is also known as the utero-vesical fold and is in reality not a true ligament, but merely a reflection of the peritoneum, which forms the floor of the vesico-uterine pouch.

The posterior ligament is also known as the recto-vaginal fold and is formed by the reflection of the peritoneum from the posterior wall of the vagina to the anterior wall of the rectum. It is not a true ligament, as there are no white fibers found in its structure. It forms the floor of the Culdesac of Douglas.

The sacro-uterine ligaments form the side walls of the pouch of Douglas and are merely peritoneal folds extending from the second and third segments of the sacrum to the lateral walls of the rectum, and from there to the lateral margins of the uterus. Their anterior attachment is at the point of union between the cervix and the uterus. These so-called ligaments approach more nearly the structure of a true ligament than do the two single ones, as they contain some fibrous tissue and a small quantity of muscular tissue. The muscular tissue is designated by the name of recto-uterine muscle.

The round ligaments are two in number and are the only true ligaments of the uterus. They are attached at the upper extremity of the lateral margins, one on each side, and lie between the layers of the broad ligaments. They are formed of white fibers and extend from their point of attachment on the uterus somewhat anterior and inferior to the fallopian tubes, projecting forward, outward and somewhat toward the superior to the internal abdominal ring. Thus they enter the inguinal canal and ultimately extend to the external abdominal ring and are inserted into the connective tissue of the labia majora. In the round ligaments are also contains muscle fibers of the non-striated variety, and they are enclosed by an extension from the peritoneum which, in the fetus, is known as the canal of Nuck. This canal of Nuck is usually destroyed in the adult, due to the retraction of the peritoneum, toward the pelvic cavity.

The broad ligaments are also known as the lateral ligaments and are formed by the floor of the peritoneum, extending over and surrounding the uterus, thus allowing the two folds to come in contact at the sides of the uterus and extend from here to the lateral margins of the pelvis. It is these two folds of the peritoneum which lie in contact and which form two great wings, extending outward from the body of the uterus, that constitute the two broad ligaments. These broad wings form a septal wall across the pelvic cavity which divides it into an anterior and posterior division. In the posterior division is found the rectum and some of the convolutions of the small intestines, while in the anterior division is found the bladder, the urethra and the vagina. Because of the position of the uterus, the anterior surface of the broad ligament faces forward and downward, while the posterior surface faces backward and toward the superior. The outer margins, however, are more nearly vertical than those which are attached to the uterus.

Between the anterior and the posterior layers of the

broad ligament are contained the fallopian tube, the round ligament, the ovary, the ovarian ligament, the parovarium, the paro-phoron, the parametrium and some non-striated muscle fibers. At the upper end or margin of the broad ligament, where the one layer joins with the other, is contained the fallopian tube, which marks the upper extremity of the ligament. That fold of the broad ligament which extends to and encloses the fallopian tube is known as the mesosalpinx and in this mesosalpinx, the lower border of which is formed by the ovarian ligament and the ovary, is contained the parovarium and the paro-phoron. At the outer margin of the broad ligament the attachment is not complete along the entire course, but from the fimbriated end of the tube at the superior to the point of attachment at the inferior, there is a concavity where the margin is free. This free margin is known as the infundibulo-pelvic ligament.

The posterior layer of the broad ligament extends backward to form a small pouch which contains the ovum. This depression or cavity in which the ovary lies is known as the ovarian bursa and that part of the broad ligament which serves to extend from here to the anterior layer of the broad ligament is known as the mesovarium.

The parovarium is formed by a set of tubes lying in the mesosalpinx, one of them being parallel to the fallopian tube, and known as Gartner's duct, while into it there are emptied a number of more minute tubules lying between the layers of the mesosalpinx and extending from the region of the ovary. This is a closed set of tubes and Gartner's duct is the remains of the fetal structure known as the Wolffian duct. The paro-phoron is also found within the mesosalpinx and consists of a set of small, closed tubules which cannot be distinguished with the naked eye. This organ lies nearer to the uterus than does the parovarium.

The cavity of the uterus is small as compared with the outer dimensions of the organ and this because of the great

thickness of the uterine wall. The part of the cavity which lies within the body is triangular in shape, and flattened from anterior to posterior so that the posterior wall lies in direct contact with the anterior wall. The base of the triangle which is thus formed is toward the superior and the two angles which are found at the base are formed by the funnel-shaped uterine openings of the two fallopian tubes. At the apex of the equilateral triangle is a minute opening into the cervix, which is known as the internal os of the cervix.

The cavity of the cervix is a somewhat constricted canal but of a spindle shape, due to the fact that it is particularly constricted at each end, while it is somewhat dilated in the center. These two ends are known as the internal and the external os of the uterus. On the anterior wall, and on the posterior wall, are two ridges or columns, following a longitudinal course and from these two ridges there extend outward in a circular direction a number of smaller ones. The general appearance is that of a tree trunk with a number of branches extending outward from it and thus the formation is called the arbor vitae, or the tree of life. This peculiar formation is particularly apparent in nullipera, while it is less distinct in those women who have borne children.

The uterus is composed of three coats named from without inward: The serous, the muscular and the mucous.

The serous coat is nothing but peritoneal covering which completely invests the uterus, except on the lower part of the anterior surface, where it extends only to the point of union between the body and the cervix. This serous covering is closely adherent to the muscular coat, except on the lower one-fourth of the posterior surface, where it is separated from this organ by a mass of connective tissue. At the sides of the uterus the peritoneum is reflected outward and forms the anterior and posterior layers of the broad ligament, which, as has been said, encloses a number of different structures.

The muscular coat forms the greatest part of the uterine

wall and it is composed of a very compact mass of muscle fibers of a grayish-red color. This muscular coat is particularly heavy at the middle part of the body and the fundus, while it becomes thinner at the lower extremity and near the openings of the fallopian tubes. The entire muscular coat is divided into three layers, known as the external, the middle and the internal. The external layer is found principally on the anterior and posterior surfaces as a very thin mass of transverse fibers on the fundus, while they are arranged in both a circular and a longitudinal direction on the anterior and posterior walls. All of them, however, converge at the upper and outer margins and are continuous with the tissues of the fallopian tubes, the round ligaments and the broad ligaments. The middle layer of fibers is composed of those which are arranged in a circular direction and this layer is more richly supplied with blood vessels and lymphatics than either of the other two layers. It is the middle circular, and the inner layer of fibers that constitute the chief bulk of the muscular coat. The circular fibers at the lower extremity of the uterus are very numerous and form here a sphincter muscle. The inner layer is composed of longitudinal fibers, upon which rests the mucous lining. Some authorities maintain that this inner layer of muscle fibers is the muscularis mucosa, but as no true submucous membrane exists here, this can hardly be held as a fact. Throughout the entire muscular coat there are many white and yellow connective tissue fibers and it is the presence of these fibers, together with those of the muscular variety that give to the uterus its characteristic hardness. The wall of the cervix is harder than that of the uterus, due to the fact that it possesses more of the connective tissue fibers than does the body.

The mucous lining is comparatively thin and smooth and is very closely attached to the muscular tissue of the inner layer. It should be remembered that there is no submucous coat for the attachment of the mucous membrane here, such

as exists under many other mucous linings. This mucous membrane is continuous with that lining the fallopian tubes and the vagina. That membrane which lines the body of the uterus is comparatively thin and smooth, being of a light red color and is lined with epithelium of the ciliated variety. Upon examination it discloses the openings of many minute glands which are of the tubular variety. These glands are comparatively small in the unimpregnated uterus, but shortly after impregnation takes place they are markedly elongated and dilated. The lining of these tubes is composed of epithelial cells, cubical at the distal extremities, columnar at the proximal end, and near the orifice becoming ciliated in character. In the cervix, the mucous membrane is entirely different than that which is found in the body of the uterus. This difference is principally accounted for by the presence of the arbor vitae here which makes its surface extremely rough, as compared with that of the uterus, which is smooth. At the upper end of the cervix the epithelium which lines the mucous membrane is of the ciliated variety, but in the lower one-third it changes to a squamous epithelium, continuous with that lining the vagina. The roughness on the inner surface is also due to the presence here of the ovules of Naboth. These ovules are formed by the occlusion of the follicles contained in the mucous membrane which form minute cysts throughout the entire wall.

The fallopian tubes are also known as the oviducts and serve to convey the ova from the ovaries to the cavity of the uterus. Each tube is about four and one-quarter inches in length and extends in a direction toward the posterior, inferior and outward from its inner attachment at the upper and outer margin of the uterus. Each of these tubes is enclosed in a fold of peritoneum which is known as the mesosalpinx. The tube is divided into four descriptive parts, known as the isthmus, the ampulla, the infundibulum and the uterine division. The isthmus is the inner one-third of the fallopian

tube and shows a greater or less degree of constriction. The ampulla is a dilated part of the tube which curves over the ovary and terminates in the infundibulum. The infundibulum is the funnel-shaped distal extremity of the tube at the outer end of which are found the fimbriae. These fimbriae are numerous and there is usually one of them which is attached to the capsule of the ovum. This particular fimbria is known as the ovarian fimbria. Each of these fimbriae is covered on its inner surface with a continuation of the mucous lining of the tube, while on its outer surface is found the peritoneal extension from the peritoneum. These two membranes are continuous with one another. The uterine division of the tube is that part which is found lying within the uterine wall. It is a very narrow extremity and shows an opening into the uterus which is smaller than that at the fimbriated extremity of the tube. The hydatids of Morgagni are small vesicals which are usually present at the fimbriated extremity of the tube and are either attached to the fimbria or to the peritoneum near them. They are, as a rule, possessed of a long pedicle which allows them free movement.

The wall of the fallopian tube is formed of three coats known from without inwards as the serous, muscular and mucous.

The serous coat, like that of the uterus, is merely a part of the peritoneal covering beneath which is a very small amount of loose connective tissue. The muscular coat consists of two layers, an outer longitudinal and an inner circular one. The muscle fibers which constitute both of these layers are of the non-striated variety. The mucous lining of the tube is continuous at the proximal end, with the lining of the uterus, while at its distal extremity it is continuous with the peritoneum. In this mucous membrane are found longitudinal folds which are more apparent at the outer end than at the inner extremity. The mucous membrane is lined by ciliated

epithelium, which is continuous with that found lining the uterus.

The ovaries in the female are analogous to the testes of the male and are two oval shaped organs enclosed in the ovarian bursa of the broad ligaments. Each ovary is connected by the mesovarium to the broad ligament, and to the uterus by the ligament of the ovary, while at its upper extremity the ovarian fimbria serves to unite with the tube. Each ovary is of a grayish-red color and the surface may be either rough or smooth, dependent upon the age of the woman and the degree of ovulation which has taken place. Each ovary measures about one and one-half inches in length, three-fourths of an inch in breadth and about one inch in thickness. The ovarian ligament is a round structure extending from the lower border of the ovary to the upper and outer margin of the uterus between the layers of the broad ligaments. This ovarian ligament is composed of white fibers of a connective tissue variety, mingled with a large quantity of non-striated muscle fibers.

The ovary is covered by an extension of the peritoneum which forms a serous membrane, although this covering differs somewhat from the other parts of the peritoneum. It differs in that it is an epithelial covering composed of a single layer of columnar cells, while the true peritoneum is formed by flattened endothelial cells. This outer covering of the ovary has been designated as the germinal layer of Waldeyer and it is this covering which gives to the surface of the ovary a dull gray appearance, rather than the smooth, glistening appearance which is present in other parts of the peritoneum.

The inner part of the ovary is formed of a distinctly soft tissue which is extremely vascular and is composed of a mass of fusiform cells with a few of the ordinary connective tissue cells. The tissue is particularly compact on the outer surface of the ovary and there are contained here some short connective tissue fibers. This outer thickening of the ovary is

called the tunica albuginea, although in reality it is not a true capsule in any sense.

Within the substance of the organ there are various cavities of different sizes which are filled with fluid. They are known as the ovisacs or the Graafian follicles. These Graafian follicles originate just beneath the cells of the serous covering, where they assume a diameter of about one one-hundredth of an inch. That part of the ovary in which they are found, because it is on the outside of the organ, is known as the cortical substance. These Graafian follicles on the outer surface are more numerous during childhood than in later years. After the age of puberty they are found throughout the entire organ and it is at this time that they are variable in size. This variation in size occurs because of the difference in the stages of the development and the small mass of cicatricial tissue which remains after a follicle has ruptured, is known as the corpora lutea. As the follicles develop, they retreat from the surface of the organ toward a center which is extremely vascular and which is known as the medullary substance.

The wall of the Graafian follicle has on its outer border a network of connective tissue and blood vessels which forms the ovicapsule. This ovicapsule is lined by a layer of cells which present a granular appearance and this layer is known as the membrane granulosa. This inner lining is usually thickened to form a distinct papilla near the part which is nearest the surface of the ovary and this papilla is known as the discus proligerus. In this mass of cells is imbedded the ovum. The entire cavity of the follicle is filled with a clear serous fluid which accumulates from month to month and is ultimately discharged together with the ovum when the follicle ruptures.

The egg tubes which are formed originate from the germinal layer of Waldeyer by the growth of this layer downward into the ovary. These egg tubes of Pfluger are filled with a fluid and are gradually closed on the end nearest the

surface and are finally cut off from the membrane which develops them. They are then known as Graafian follicles and begin their progress into the substance of the ovary where they undergo enlargement until they are finally ruptured to the external.

CHAPTER II

PHYSIOLOGY OF FEMALE GENERATIVE ORGANS

Puberty—Puberty is that period in a woman's life when she develops into sexual and mental maturity. The age at which this change occurs is variable in different climates and in a general way it may be said that in those women residing in hot countries the change begins around the tenth year, while in the northern climates it is at a much later period. In the temperate zone the change usually makes its appearance about the fourteenth or fifteenth year, although it is not complete until about the twentieth year, because it is not until at that time that the individual is capable of conceiving and bearing children, without experiencing some deleterious effects. The physical changes that lead up to the alteration from girlhood to womanhood are gradual, and early conception is not conducive to the best physical development of the woman.

Menstruation—A condition which appears at puberty in which there is a discharge of blood from the uterus at intermittent periods. This physiological process is usually absent during pregnancy and the lactation period, although it is not always absent at these times. Although normally this is a physiological process which takes place without giving rise to any general or local abnormal symptoms, this is not always the case and frequently extreme suffering is experienced at the menstrual periods. Nervous irritability sometimes manifests itself and a general indisposition of the patient for physical activity. Very often the breasts are swollen and tender and the thyroid gland is enlarged. Headaches are a very com-

mon symptom and occur usually in the vertical or occipital region. The external organs of generation sometime become congested and more or less sensitive. The mucous membrane of the vagina assumes a violet color, due to the congestion of blood here. There is usually more or less of a sensation of heaviness and aching in the lumbo-sacral region and sometimes extreme pain is experienced in the uterus, which radiates from here throughout the entire pelvis.

Menstruation is really the result of the stripping off of the inner lining of the uterus and the consequent exposing of the blood vessels which lie in this lining. The blood is thus allowed to escape into the uterine cavity, from where it is expelled to the external by way of the cervical canal in the vagina. The idea that the menstrual flow comes from the ovaries is entirely unfounded, although in some cases it is derived in part from the inner ends of the fallopian tubes. These abnormalities which occur during the menstrual period and which result in local or general symptoms are caused by subluxations in the lumbar region which are productive of various forms of abnormalities in the generative tract.

It cannot be stated that there is any given law governing the length of time the flow exists or the intervals of the menses. Ordinarily menstruation occurs every twenty-eight days, although the flow may manifest itself at shorter or longer intervals and be absolutely normal to the individual. Then again, some women flow for six or seven days and this length of time is normal to them, while in others the duration is for a much shorter period of time and that condition is normal to that individual. The quantity of blood which is lost is variable, but the average amount is from four to six ounces.

Menstrual life lasts for from thirty to thirty-five years and in some women much longer. It begins at the age of puberty and terminates at the menopause, which usually occurs from forty-five to fifty years of age.

Whether ovulation occurs at the same time that menstru-

ation does is a question which has never been fully determined. Many authorities maintain that normally the ovary discharges the ovum during the menstrual period, while others maintain that the ovum is discharged immediately before or following. Still others contend that menstruation has nothing to do with the rupturing of the Graafian follicles and the discharge of the ovum and they point to the fact that impregnation sometimes occurs before the age of puberty and after the menopause to bear out their conclusions.

Menopause—This is the period in the life of a woman when she ceases to menstruate and passes the productive period. This period is also known as the climateric and the change of life. The time of its occurrence is in the temperate zone from forty-five to fifty years of age, although there is a wide variation from this usual time. Cases have been known where the menstruation has disappeared before the twenty-fifth year and other cases are on record where it has continued until the eightieth year. As a rule, it may be said that an early puberty is indicative of a late menopause, while a late puberty is indicative of an early menopause. In general, it may be said that in the tropical zones the menopause occurs late in life as puberty occurs at an early stage, while in colder climates the menopause occurs at a comparatively early period, as the puberty appears late. It may also be said that the menopause appears earlier in women who are weak and fat, while it occurs later in strong, lean women.

There are certain pathological conditions which serve to delay the menopause and they are those which produce congestion in the uterus. Particularly is this condition true of inflammation of the tubes and ovaries and of neoplasms in any part of the pelvic region where they produce pressure upon the veins draining the uterine wall. In these cases the menstruation continues as an adaptative process at the regular menstrual period, merely to relieve the congestion that would otherwise be a continuous source of annoyance and discomfort

during the life of the patient. The change of life comes on gradually and, as a rule, occupies from two to three years in making its appearance. In some cases, however, it occurs suddenly and the menstruation disappears without any previous irregularity in its appearance.

At the time of the menopause senile changes occur wherein the generative organs become atrophied and there is a complete alteration in their physical appearance and their physiological activity.

The mons veneris becomes more or less flattened and all the tissues of the vulva atrophy from loss of connective tissues, particularly the fats of which they are formed. The hair on the mons veneris and on the external surface of the labia majora turns gray and part of it drops out. The wall of the vagina becomes thin and of a paler color, due to the decrease in the blood supply and the muscular tissue decreases in quantity so that the walls become more flattened. The uterus decreases in size, due to the disappearance of many of the muscle fibers of which it is composed, and the lower part of the cervix which is found in the vaginal canal atrophies very rapidly until it has entirely disappeared. The fallopian tubes and the ovaries also undergo atrophic changes and may remain merely hard rudimentary organs. The breasts become flattened, due to the atrophy of the glandular tissues and frequently there are coarse hairs which appear on the upper lip and the chin of the individual. Frequently there is an accumulation of fat over the entire body, but principally in the abdomen, which causes the latter to protrude to a greater or less degree. Occasionally this condition is entirely reversed and the individual becomes thin after the period of the menopause.

Ordinarily the disappearance of the menstrual flow, either gradually or suddenly, and the hot flushes that manifest themselves at this period are the only distinctive symptoms. This cessation of the menstrual flow, when it occurs gradually, is usually ushered in by the intervening period being lengthened.

This may be for only a few days or it may be for several months, when the flow will reappear again as usually and be followed by more or less irregularities until it finally discontinues entirely.

As this is a discussion of the physiological activities which occur in the body we are not particularly concerned with the unusual symptoms which manifest themselves at this time. Suffice it to say that the circulatory disturbances are the most common of these unusual symptoms while they may also manifest themselves as nervous, digestive and local disorders.

Menorrhagia and Metrorrhagia

Memorrhagia is an abnormality which discloses itself in the form of an excessive flow of blood at the menstrual periods, while metrorrhagia is an excessive flow of blood between the menstrual periods. Properly speaking, these are two conditions which are, in themselves, symptoms, but because of the frequency of their appearance and the great variety of the diseases and conditions in which they are found, we will enter into a brief discussion as to those causative factors and the associated conditions.

Displacements of the uterus, either in the form of flexions or versions or prolapses are productive of either of these conditions in that they serve to partially obstruct the veins which drain the uterine wall and thus produce congestion in them which, associated with a weakness in the tonicity of the vessels, allows for hemorrhage. The displacements of the uterus are the result of a lack of motor impulses being supplied to the wall of the uterus together with a lack of motor impulses to the vessel walls of this organ. These conditions are brought about by subluxations in the lumbar region, from which those nerve fibers emit which supply the uterus.

Subluxations in the lumbar region when associated with pregnancy are very often productive of menorrhagia or met-

rorrhagia, due to impingements which produce excessive calorific impulses in the uterine wall. This condition, associated with abnormalities in the position of the uterus during pregnancy, or associated with parts of the placenta remaining adherent to the uterine wall, may give rise to inflammatory changes which allow for hemorrhage in the uterine cavity. Here the adherent membranes act as irritating substances which in themselves would not be productive of inflammation but which, when associated with impingements involving the calorific and secretory supply of the uterine wall, do manifest themselves by inflammatory changes.

Malignant tumors either of the carcinomatous or the sarcomatous variety give rise to menorrhagia or metrorrhagia because of the secondary changes which occur in them and which involve the blood vessels supplying their structure. These secondary changes involve the blood vessel walls so that they become perforated and allow for the escape of blood into the uterine cavity. Here again, although the symptom is associated with a subluxation, that subluxation is not necessarily the cause of a lack of motor impulses to the vessel wall. Rather there are ulcerations in the substance of the sarcoma or the carcinoma which are the result of an excess in the calorific expression and a deficiency in the reparatory and nutritive expression.

Inflammations of the uterus, due to sub-involution, is a common disease which discloses the symptoms of menorrhagia and metrorrhagia. This because of the fact that there is an excessive supply of blood to the uterus, which is not decreased during the puerperal period as normally it should be. When this condition manifests itself and when it is associated with either a lack or an excess of motor impulses, to the capillary or venule walls, the symptoms of menorrhagia and metrorrhagia may be manifest. If there is a lack of motor impulses to the tissues surrounding the capillaries, these vessels dilate and often rupture and the same condition may

exist in either the arterioles or the venules. On the other hand, if there is an excessive expression of motor impulses to the walls of the veins or venules, they become occluded and the blood is dammed back into the capillary and arteriole system so that the pressure here is materially increased. This increase in the pressure, together with a lack of motor impulses in those vessels where the pressure is raised often gives rise to rupture and hemorrhage.

Uterine tumors or tumors in any other part of the pelvic cavity, but more particularly those which involve the tubes or the ovaries are, together with associated subluxations which give rise to a lack of motor function in the vessels of the uterus, productive of menorrhagia and metrorrhagia. These tumors mechanically obstruct the veins draining the uterine wall and thus the blood pressure in these vessels is materially increased. It is seldom that this condition alone is sufficient to produce rupture and hemorrhage into the uterine cavity, but when it is associated with a weakness in the vessel walls here, due to a lack of motor impulses, hemorrhage is the result.

Amenorrhea

Definition—An incoordination characterized by the complete absence of menstruation. Properly speaking, this is a symptom rather than a disease in itself, but because of its prevalence we will enter into a general discussion of those conditions in which it is found.

Associated Conditions—There are certain periods of life when amenorrhea is normal and it is at those times before puberty has appeared and after the menopause. Also it is a normal condition during pregnancy and during the lactation periods.

Congenital atresia is an abnormal condition which serves to obstruct the cervical canal and thus, although menstruation occurs in the uterus, the fluid is retained within the cavity and

cannot make its appearance in the vaginal canal. If the menstrual flow is comparatively small, it may be absorbed at about the same rate as it is given off into the uterine cavity and thus no abnormal manifestations result. In those cases where there is a copious discharge of blood from the wall of the uterus, it is manufactured in larger quantities than it can be absorbed and as a result there is an accumulation of the fluid which sometimes becomes dammed back to the fallopian tubes and into the abdominal cavity. When it does back up in this way, absorption usually takes place by the peritoneum and the excess blood is drained off by other excretory channels. An imperforate hymen causes the blood to be dammed back to the vaginal canal as well as to the uterus and there is a consequent dilatation of the vagina as well as the uterus and sometimes the tubes. There is also the possibility of atresia in the upper part of the vaginal canal, but this is an uncommon occurrence. In any of these abnormalities, the condition may be congenital or it may be acquired. In those cases which are congenital the causative factor lies in subluxations in the lumbar region, which are productive of an imperfect development. This imperfect development may be the result of excessive expansion impulses or to a lack of expansion impulses. In the case of the imperforate hymen the connective tissues which constitute the hymen are overgrown, due to an excessive expansion expressed here. If, on the other hand, there is an atresia of the vagina or the cervix, it is the result of an imperfect development of the mucous lining of these organs and a consequent adhesion between the adjacent connective tissues. This is entirely the result of a lack of expansion impulses being supplied to those centers from which the mucous membrane is developed.

Congenital conditions exist occasionally wherein there is an absence of some of the generative organs. When this absence includes the uterus, there is no possibility of menstruation because it is in this organ that the menstrual flow orig-

inates. Here the cause of the abnormality is a lack of reproduction impulses and expansion impulses being supplied to the tissues of the pelvis, from which the uterus is developed. Primarily, it is the result of lack of reproduction impulses being carried to the uterus of the mother, while indirectly it is the result of a lack of expansion impulses being manifest in the patient. Impingements in the lumbar region sometimes give rise to a lack of development in the sexual organs at the time of puberty, and even though the organs are present, they fail to develop and fail to perform their functions. In these cases menstruation does not occur and the entire incoordination is the result of a lack of expansion and nutritive impulses being expressed in the generative tract. Still other cases are known where there is perfect development of the generative organs but where ovulation does not occur and menstruation is absent. Particularly is this true in the so-called masculine type and it is more apt to occur in those individuals whose vitality is entirely utilized in the development of the physical body. It cannot, however, be said that an excessive physical development results in a loss of the physiological function in the generative organs, because many cases are known where the physical development has been carried on to a high degree and yet the sexual development has progressed normally. In this latter case the incoordination is the result of impingements in the lumbar region which serves to decrease the quantity or quality of the nutritive impulses with which the uterine wall is supplied and as a consequence fails to produce its function.

Atresia of the vagina may be the result of inflammatory changes occurring in an acute vaginitis wherein ulcerations are formed and the mucous membrane is entirely destroyed. In these events a raw, bleeding surface results which allows the connective tissues of the adjacent walls to come into close proximity and the cells send out branches which unite with the branches of the opposing wall and thus occlude the canal.

In these cases the causative factor lies in an excessive expression of expansion impulses and the result is a damming back of the menstrual flow in the upper part of the vagina, in the cervix and in the uterus.

Amenorrhea is often caused by atresia of the cervix of the uterus and this atresia may be due to the development of carcinoma in the cervix and the adhesions which follow as a consequence. Hyperplasia of the cervix, which is the result of an excessive expression of expansion impulses, also serves to obstruct the uterus and dam the menstrual flow back into the uterine cavity. Superinvolution or atrophic alterations from any other cause manifest themselves in the form of amenorrhea and the condition is the result of a lack of secretory impulses and an excessive quantity of motor impulses in the uterine wall. These abnormalities are principally the result of excessive expression of motor impulses in the walls of the arterioles which supply the uterus, wherein the muscle fibers are contracted and serve to cut off the normal supply of oxygen and nutritive material. The blood pressure is also decreased and the possibility of rupturing the capillaries or the larger vessels is not as great as when the blood pressure is normal.

Atrophy of the ovaries, due to the lack of expansion impulses being expressed in them, is very often associated with amenorrhea because the function of ovulation and that of menstruation appear to be closely allied. If the ovaries are atrophied or the capsules surrounding the ovaries are materially thickened so the Graafian follicles cannot rupture to the external, there is no longer a necessity for menstruation and the alterations in the mucous membrane of the uterus take place as an adaptative measure.

Prognosis—The prognosis of amenorrhea is entirely dependent upon the disease with which it is associated and in the majority of these conditions the prognosis may be held as favorable. If, however, it is associated with cancer of the cervix, the prognosis of the latter determines the prognosis of the

amenorrhea and the results which may be hoped for in cancer are dependent entirely upon the degree to which the case has progressed. If the centers from which the normal tissues are developed have been destroyed by the degenerative changes, then the prognosis is unfavorable and the prognosis of amenorrhea is likewise unfavorable. If the condition is due to congenital causes, the abnormalities are the result of subluxations in the lumbar region which, in turn, have resulted from a lack of reproduction impulses in the mother. It is very doubtful, except in rare cases, that any results can be obtained by adjusting patients who are suffering from a deficiency in the generative organs themselves. Particularly is this true if the centers of development have never been properly traced in the patient.

Dysmenorrhea

Definition—Dysmenorrhea is an incoordination characterized by painful menstruation. This, in itself, is not a disease, but is an abnormal condition associated with some pelvic disorder which is dependent upon subluxations in the lumbar region for its origin. We will here enter into a general discussion of the associated conditions in order that this common symptom may be properly classified with those diseases which are the causative factors.

Associated Conditions—Inflammation or pelvic congestion are two of the most common causes of dysmenorrhea and they are particularly apt to occur in those women who have borne children for the reason that subluxations in those regions which are productive of inflammation result after childbirth. Primarily the labors and muscular straining that are coincident with delivery are extremely apt to produce subluxations in the lumbar region and these subluxations are causative factors in producing an excess of calorific impulses and in many cases a lack of nutritive and reparatory impulses.

The severity of the inflammation determines the degree of dysmenorrhea which manifests itself.

Lack of motor impulses which serve to allow for displacements of the uterus are considered a causative factor in the production of dysmenorrhea in that these abnormal positions produce pressure on the veins draining the uterus and as a consequence the blood is dammed back into the mucous membrane. Naturally when this condition exists there is an excessive flow of blood, and, furthermore, the mucous lining of the cervical canal becomes thickened from the escape of serum and the opening in the vagina is thereby decreased. Where dysmenorrhea is the result of partial obstruction of the cervical canal, menstruation occurs normally up to the time when the accumulated fluid begins to make its escape from the uterus. Here the discharge meets the obstruction in the cervix and in order to make its escape it is necessary for the uterus to produce marked contraction. These contractions are usually painful and the pressure of blood in the uterus is materially increased in order that it may be forced through the obstruction that exists either in the cervix, the vagina or the vulvo vaginal opening. Flexions of the uterus are usually associated with dysmenorrhea because when the body bends upon the cervix, it serves to decrease the size of the cervical canal and this constriction is made even more severe by the endocervicitis which is associated with the flexion. It can readily be seen that anterior flexions are more apt to produce partial occlusion of the cervix than posterior flexions. These conditions are due to a lack of motor impulses in those tissues which form the cervix and the uterus. Any excess in the supply of expansion impulses to the tissues of the cervix are productive of a partial occlusion of this canal, either because of an overgrowth of the entire cervix or because of the development of polypi which extend into the canal and produce there a ball-valve action. Exfoliative endometritis wherein the entire inner lining of the uterus is sloughed off is also a

causative factor of dysmenorrhea in that the materials which are given off from the uterine wall find lodgement at the internal os and thus blood cannot make its escape through the canal.

Prognosis—The prognosis in practically every case of dysmenorrhea is favorable, although the time occupied in the restoration of normality is dependent upon the associated condition. If dysmenorrhea is due to flexion, the restoration of normality should not take a longer time, because all that is necessary is to return the lumbar vertebrae to their normal positions. In other abnormalities, however, where excessive tissues have been formed or where degenerative changes have taken place, it is not only necessary that the subluxations be reduced, but time must be allowed for Innate to repair the damage which has been done by degeneration or to tear down the excessive tissues which have been formed in the case of hyperplasia or polypi.

CHAPTER III

DISEASES OF THE VULVA

Hematoma of the Vulva

Definition—A vascular tumor of the vulva.

Etiology—Subluxations at K. P. and P. P. This condition is the result of lack of motor impulses passing through the walls of those blood vessels which lie in the vulva. Subluxations in the middle lumbar and in the lower lumbar regions result in impingements especially affecting the motor nerves emanating from the chord in this particular region. This allows for a decreased peripheral resistance in the arterioles of the vulva, thus allowing for an increase in the pressure of blood in the capillaries. As a result, there may be rupture of a number of the capillaries or of the arterioles, thus permitting the escape of blood into the surrounding connective tissues and the formation of an hematoma.

Symptoms—As a rule, hematoma appears suddenly, and is due to the rupture of one of the blood vessels of the vulva. Varicose veins are, because of their stretched walls, more apt to rupture than those which are normal. Then, too, during the labor incident to childbirth there is a very severe strain placed upon all the tissues of the genital tract, and if, because of a lack of motor impulses, the vascular walls are weakened, the vessel wall is apt to rupture and allow the blood to escape into the surrounding tissue. The size of this tumor, thus formed, varies, but in general it may be said to be larger in the pregnant than in the non-pregnant state. In the former it frequently attains the size of a large grape-fruit while in the latter it seldom exceeds the size of a hen's egg.

There is pain which is of a more or less constant character, and is produced by the stretching and displacing of the surrounding tissues, and by the weight of the tumor itself, which gives rise to a sensation of fullness. Globular in shape the tumor is purple in color, due to the presence of blood close beneath the surface, and is light or dark dependent upon the character of the blood contained therein. It is tender and elastic to the touch and sometimes over the surface are ecchymoses.

Prognosis—Under adjustments, there would be an absorption of the fluids and solids forming the tumor, but if the substances contained underwent suppuration and finally formed a vulvar abscess, this process would be somewhat slower.

Gangrene of the Vulva

Definition—An incoordination wherein part or all of the tissues of the vulva are completely severed from their connection with Innate through the nervous system, and death of the tissue results.

Etiology—Subluxations at K. P. and P. P. This is a condition resulting from a lumbar subluxation which produces a lack of nutritive impulses particularly in one labium. It may also be caused by a lack or an excess of motor impulses supplying the vessel's walls either of the arterioles or the venules. If the condition is one affecting the venules the blood is then backed into the capillary and arteriole system, thus producing a vascular stasis which results in the condition known as moist gangrene. If it is an involvement of the arterioles, the blood is kept out of the capillaries and the condition known as dry gangrene results. In either of these conditions, however, or in the condition which is due to lack of nutritive impulses the cause of the disease is directly traceable to an impingement on some type of nerve fibers emitting through the lumbar foramen.

Symptoms—This disease occurs usually in only one labium, and at the onset produces much pain, and a raised temperature. Very shortly there appears a small spot upon the surface which increases in size and which has, forming upon its surface, vesicles or blebs which later rupture and disclose the gangrenous tissues beneath. This spot when it first appears is either a dark red or a black in color. When the blebs rupture they discharge to the surface a thin, somewhat sanguinous serum.

Prognosis—Without adjustments the death rate is very high. The septic products of the involved tissues are absorbed by the serous system, transmitted to all parts of the body, giving rise to septicemia or embolism. Under adjustments, however, with the elimination of the body kept in normal condition there would merely be an absorption from the tissues involved, and health would result.

Vulvitis

Definition—An incoordination of the tissues of the vulva, characterized by inflammation, and classified in different ways, dependent upon the character of the inflammation. The four types of vulvitis are:

Simple catarrhal vulvitis.

Gonorrheal vulvitis.

Follicular vulvitis.

Diabetic vulvitis.

Simple Catarrhal Vulvitis

Definition—An incoordination of the vulva, characterized by inflammation of the vulva and hyperactivity of the mucous membrane.

Etiology—Subluxations at K. P. and P. P. This disease is primarily produced as the result of excessive quantities of

blood contained in the capillaries of the vulva. Medical authorities have given as causes: Excessive coition; masturbation; or any other abnormal condition which tends to irritate and congest the tissues involved. Other causes given are those of irritating excretions produced either in the uterine cavity or in the vaginal cavity. It must be borne in mind, however, that while these conditions may be associated with a simple catarrhal vulvitis, they cannot be considered as causative factors. There are hundreds of others laboring under similar circumstances who do not develop the disease in any form, which leads us to the inevitable conclusion that there must be something else which is vitally concerned in the production of a weakened condition making the tissues involved susceptible to associated circumstances.

Symptoms—Because of the variation of symptoms the disease is divided into the acute and chronic forms. The acute form begins with tenderness, and pain in the vulva, with smarting and burning when in contact with the urine as it passes over the affected surface. The tissues of the vulva become swollen and congested, and from the surface are discharged large quantities of fluids, usually muco-purulent in character, and which come in contact with the inner surface of the thighs, and the sensitive membranes around the anal region. This sometimes produces slight irritation in these localities but seldom is it of the severe type. The excreta is possessed of a very offensive odor. Unlike the gonorrheal form of vulvitis, there is very little extension of inflammation from the original membrane involved, and as a consequence involvement of the vagina, urethra, glands or ducts of Bartholin is rare.

In the chronic form the most prominent symptoms are itching and burning, which at times becomes extremely severe, causing the patient to lose sleep and rest to such an extent that the general health may be affected. The discharge here is thinner and more scanty than in the acute form, but be-

cause of the abrasions consequent to the pruritus, the inflammation is more apt to extend to the inner surface of the thighs and to the anal region, where ulcerations may be formed. In the chronic form the inguinal glands may be involved and give rise to pain in the inguinal region.

Prognosis—The results obtained in simple catarrhal vulvitis either of the acute or the chronic form, are very gratifying, although the time element must play a part here as in all forms of disease where a subluxation, long existent, requires more time to adjust than one which has recently occurred.

Gonorrheal Vulvitis

Definition—An inflammation of the vulva associated with the presence of the gonococcus of Neisser.

In General—This is the most frequent form of vulvitis, and of them all is the most apt to involve a large area. Beginning as a vulvar inflammation it often spreads to involve the urethra, vulvovaginal glands and ducts, vagina, and even the uterus and its appendages. As it is true that gonorrheal inflammation of the vulva is most apt to affect surrounding structures, so it is also true that gonorrheal affection of the vagina, urethra, and other adjacent structures is more apt to involve the vulva than simple inflammation of these structures.

Etiology—Subluxations at K. P. and P. P. In the past it has been the accepted belief that gonorrhea in any form is the result of the presence of the gonococcus of Neisser. That this fact is not true is proven by the existence of thousands of individuals who have come in contact with the gonococcus bacillus without contracting the disease. This leads us to the conclusion that the micro-organism is a condition in the course of the disease rather than a causative factor in its production. If this were not true, every individual who came in contact with the gonococcus world, of necessity, develop the

disease. A subluxation in the lumbar region producing impingement on those nerve fibers which supply the generative tract is essential as well as a subluxation at K. P. which effects the general bodily elimination. As the result of these impingements, there is a generally weakened condition of the tissues and in consequence any toxin which comes in contact with the congested mucous membranes acts as an irritant which is productive of inflammation. In brief, the mere fact that the bacillus is present is not proof that it is the causative element.

Symptoms—The symptoms are practically the same as those found in simple catarrhal vulvitis, except that they are more severe. Urination produces far more pain because of the usual involvement of the urethra which occurs early in the disease. The inguinal glands may become involved and when this is true they give rise to a dull aching pain in the groin. If the vulvo-vaginal glands become involved, the ducts leading to them are also involved and, if occluded, give rise to intense pain. This disease may also be acute or chronic, dependent upon the severity and the duration of the symptoms.

Prognosis—This disease responds readily to adjustments, more especially if taken early in the course.

Follicular Vulvitis

Definition—An incoordination wherein the follicles of the sebaceous and the sudoriferous glands undergo inflammatory changes, while the connective tissue between these follicles is not involved.

Etiology—Subluxations at K. P. and P. P. In this disease the cells which particularly are involved are those lining the hair follicles or the gland follicles. These cells have a normal function of secretion and being supplied with an excessive amount of secretory impulses they become hyperactive. There may also be associated an excessive amount of

calorific impulses and a lack of reparatory and nutritive impulses. If this latter condition exists, there are formed in the hair follicles and in those of the glands, minute droplets of pus, which find their way to the surface from the gland follicles, but which are dammed back in their hair follicles. If the hair is removed, it is found that this little pouch of pus follows to the surface. The reason why the hair follicles and those of the glands are involved rather than the surface of the mucous membrane is that the nerve fibers supplying these secretory cells are the ones impinged.

Symptoms—The disease begins with a pruritus which may become very severe. Local pain and tenderness is present with burning sensations upon micturition, more especially if the urethra is involved. The surfaces of the labia are extremely sensitive. The inner surface alone may be involved or both the inner and the outer surfaces. The appearance is one of innumerable papillae, varying in size from that of a pin head to that of a pea, and due to the occlusion or partial occlusion of the ducts leading from the glands. Because of the great degree of pain and tenderness there may be vaginismus which will interfere with intercourse.

Prognosis—Excellent under adjustments.

Diabetic Vulvitis

Definition—An inflammation of the vulva, caused by a subluxation at P. P. and associated with a urinary decomposition in the vulva.

Etiology—Subluxations at Spl. P. or Li. P., K. P. and P. P. This is an incoordination peculiar to those individuals suffering from diabetes and its cause has been ascribed to the presence in urine of grape sugar, which acts as an irritant to the sensitive mucous membrane. There is no question but that an abnormal urine contains toxins which are detrimental to the mucous membranes with which they come in contact,

but it is equally certain that this condition alone would not produce inflammatory changes. The underlying cause is found in subluxations in the lumbar region which gives rise to a lowered resistance of the vulvar mucous membranes. With this decreased resistance, membranes are susceptible to the action of the decomposed glucose and inflammation results. If it were true that the toxins in the urine alone were necessary to produce the disease, every woman suffering from diabetes would, of necessity, develop inflammation of the membranes with which that urine came in contact.

Symptoms—At first there is slight pruritus which soon develops to an intense itching, involving especially those surfaces which the urine comes in contact with. As the pruritus develops, there are excoriations from scratching, together with local pain from congestion, tenderness and intense smarting and burning upon micturition. The entire surface of the vulva finally assumes a reddish-copper color, and becomes dry. Interspersed over the surface are a few moist, swollen spaces, also of the same reddish-copper color. Later in the disease the inflamed area spreads over the outer surface of the labia majora, and to the mons, thighs and anal regions.

Prognosis—Favorable, dependent upon the length of time the disease has existed and the severity of the constitutional disease which is producing the abnormal urinary deposits.

Inflammation of the Vulvovaginal Glands

Definition—An incoordination of the vulvovaginal glands characterized by inflammation.

In General—This disease is very frequent and in the majority of cases is associated with gonorrhea. Occasionally subluxation at P. P. and through trauma the gland becomes injured, inflammation is not uncommon. Very often, after it is associated with simple vulvitis, and if there is a causative all traces of gonorrhea have apparently been eliminated, this

gland and the duct leading to it become involved with gonorrheal inflammation. This is due to the fact that the subluxation which primarily produced the gonorrhea has again made its appearance and is merely a recurrence of the former condition. As a rule, only one of the glands is involved at a time, and if gonorrheal in character the affection usually extends to the duct of the gland.

Etiology—Subluxations at K. P. and P. P. This is a condition gonorrheal in origin which remain latent for a number of months or perhaps years and ultimately manifests itself by inflammatory changes in the valvovaginal glands. The toxin of a former gonorrhea finds its way through the gland ducts to the various alveoli and there remains as a latent factor until such time as subluxations obtain in the lumbar and kidney regions, producing its manifestation. In brief, so long as the tissues of the gland are capable of maintaining normal resistance, the effects of the toxin are not noticeable, but when the time comes that their impulse supply is decreased in quantity or quality excessive excretions are produced and excessive heat occurs in the parts involved.

Symptoms—At first there is the sensation of heat and burning in the affected organ, and pain occurs which is sharp and lancinating in character. Assumption of the upright position, especially when the patient is walking, or performing any other kind of exercise which calls for even slight exertion, tends to produce congestion and consequent pain. If the duct leading to the vulva is occluded, due to inflammation of the mucous membrane lining it, there is no path whereby the rapidly forming fluids may be expelled in sufficient quantities and the gland may show a marked enlargement, which if of sufficient extent, may cause retention of urine. Lying as it does at the junction of the vaginal and vulvar walls the gland extends into the labia majora when it becomes enlarged. Due to the constant absorption of the inflammatory products by the serous system the entire vulva becomes swollen and con-

gested. The excretions which are given off are of a very offensive odor. As a rule the duct is involved as well as the gland, and when this occurs the opening of this duct presents a swollen and inflamed external opening. This appearance of the mouth of the duct gives rise to the term "flea bite opening." If the duct becomes occluded a fistula may form from the gland, usually to the inner surface of the labia majora. When septic materials are formed more rapidly than they can be eliminated by the excretory system of the body, a temperature is apt to result.

Prognosis—Favorable under adjustments.

Inflammation of the Vulvovaginal Gland Ducts

Definition—An incoordination of the ducts leading from the vulvovaginal glands, characterized by inflammation.

Etiology—Subluxations at K. P. and P. P. This incoordination is the result of impingement of those nerves leading from the lower lumbar region usually occurring from the same subluxation that produce impingement of those leading to vulvovaginal glands. This is the reason that the ducts are ordinarily affected at the same time as the glands are affected. The gonococcus bacillus is usually present here as in inflammation of the glands, not as a causative factor but as an associated condition with the disease.

Symptoms—Associated as it usually is with either a vulvitis or by inflammation of the vulvovaginal glands the symptoms are very obscure. However, the "flea bite opening" of the duct is distinctive. There is localized pain along the course of the duct and the small or large quantity of pus serves to distinguish it from inflammation of the gland. It is usually found that in this disease there is a previous history of gonorrhea.

Prognosis—Favorable under adjustments.

Cysts of the Vulvovaginal Glands

Definition—An incoordination of the gland or duct, presenting cyst formations either unilocular or multilocular in form.

In General—The majority of cases of cyst of the vulvovaginal glands are of gonorrheal origin, and are the result of occlusion of the duct, either entirely or in part. Occasionally an alteration in the secretion, wherein it becomes thick and viscid is of sufficient degree to produce a cyst.

Etiology—Subluxations at K. P. and P. P. Primarily cysts of the vulvovaginal glands are the result of occlusion of the duct leading from the gland or of the tubules draining the alveoli. If it is an occlusion of either of these structures, the primary cause is traced back to impingement of the calorific nerves, which produces inflammation and consequent occlusion.

Symptoms—The symptoms of a small cyst are hardly noticeable, and it is seldom that the cyst attains a size greater than a hen's egg. When, however, they attain a considerable size they produce inconvenience in walking, and in intercourse, perhaps making the latter impossible. Upon pressure the cyst appears to be movable and elastic. The cyst may vary in size as the amount of secretion varies or as the duct allows different quantities of fluid to pass.

Prognosis—Favorable under adjustments.

Pruritus Vulvae

Definition—An incoordination of the sensory end organs of the vulva, characterized by extreme itching.

Etiology—Subluxations at P. P. perhaps also involving Li. P or K. P. Pruritus vulvae or intense itching of the vulva may be due to direct impingement upon the sensory nerve fibers. On the other hand, motor fibers supplying the arteriole

walls may be affected in such a way as to permit of distension and congestion of the blood in the capillary area. When this occurs, it results in hyperactivity of the secreting cells of the vulva and a consequent irritation of the tissues involved. A subluxation which produces pressure upon the calorific nerves leading to this sensitive mucous membrane may be productive of inflammation which, in turn, results in intense itching of these parts.

Symptoms—The itching occurs differently in different cases. In some instances it is constant, in others intermittent, while in others it occurs only during certain acts, such as walking, intercourse or any other effort which would tend to produce friction on the labia. Pruritus is most apt to occur during the menopause although it may be present in any stage of life. During the menstrual period, during the period of pregnancy and during intercourse the itching may become very severe because of the marked congestion which occurs at that time and produces pressure upon the end organs which are already extremely sensitive because of the impingement of the sensory nerve fibers which supply them.

Pruritus appears gradually, and begins with a slight itching sensation which is relieved temporarily by the patient rubbing the parts gently. As the condition increases in severity, however, the scratching becomes more and more frequent as well as more severe. It may be that the clitoris alone, or the labia, or in fact any of the divisions of the vulva may be involved without there being an affection of any other part. Often, however, the severe itching extends to other structures until all the vulva and even the inner surface of the thighs and the anal region are involved. As the itching becomes more and more severe, the patient becomes more and more irritable, and if the itching is of sufficient severity to keep the patient awake at night, there develops exhaustion from loss of sleep. The sexual demands of the patient may be increased,

and the clitoris and both labia be increased in size by infiltration of serum from the dilated blood vessels.

There may never be any alteration in the surface of the vulva if the pruritus is not severe, but if scratching becomes marked small ulcers are found on the surface. Erosion patches are not uncommon, and sometimes large areas of abraded surface are present. Cicatrices later occur, producing inelasticity of the skin and mucous membranes, and more or less hypertrophy of the entire external organs. Together with this, however, there is in the later stages, a hardening and drying of the surfaces, with a pale color and small white spots which can be distinguished from the surrounding tissues.

Prognosis—This is distinctly a disease resulting from impingement, and as soon as the pressure is removed from the nerves supplying the sensory end organs in the vulva, coordination is restored and health results.

Kraurosis Vulvae

Definition—An incoordination of the vulva characterized by progressive atrophy and contraction of the tissues of the vulva.

In General—This is a rare condition of the vulva which occurs principally in women during or after the menopause.

Etiology—Subluxation at P. P. Kraurosis vulvae is a condition resulting from atrophy of the tissues of the vulva due to lack of nutritive materials. This is brought about by direct impingement on the trophic nerves leading to all the vulvar tissues or to pressure upon those motor nerves supplying the arteriole walls, thereby occluding these vessels and shutting off the normal blood supply.

Symptoms—Just at the opening of the vagina into the vulva there appear inflammatory spots, which are peculiar in that they are somewhat depressed. These spots are very tender and are apt to render intercourse impossible. Later

they lose their appearance of inflammation and become dry, smooth and white. Organization of the tissue cells and the elimination of the fluid substances cause the structures to shrink and the opening of the vagina is thus made so small that intercourse is impossible. Then, too, the glands and hair follicles are compressed until they are obliterated, and nothing is left but dry, brittle hardened tissue.

The patient suffers during, and often after the changes have taken place, with severe pruritus, although rare cases are found where there is very little discomfort. The changes occupy an extended length of time often lasting several years.

Prognosis—The prognosis is favorable if the patient is adjusted in the early stages. If, however, the tissue changes have been made and the parts are atrophied from resolution of the connective tissue cells, the prognosis is not favorable.

Elephantiasis of Vulva

Definition—An hypertrophy of the skin and underlying connective tissue of the vulva, with inflammation of the blood vessels and lymphatics; induration and oedema.

Etiology—Subluxation at K. P. and P. P. Elephantiasis is merely an overgrowth, to a marked degree, of the tissues of the vulva and is the result of abnormal expansion impulses being sent to the connective tissues and blood vessels of the vulva. It is not reasonable to suppose that these impulses are excessive, due to direct impingement upon the expansion nerves; rather the excess here is due to impingement on other nerve fibers and Innate always sending out one hundred per cent of mentality places the impulses in a different form than in the normal.

Symptoms—In the beginning there is noticeable enlargement in the part affected, which is usually the labia majora. Shortly following there is a sensation of weight and as the tissues increase there is interference with walking, intercourse,

and at a still later period with the acts of micturation and defecation. The clitoris alone may be involved or the nymphae, but ordinarily only the labia majora is enlarged. Usually the disease begins with an inflammation of the lymphatics of the labia which produces a congestion and infiltration, and at the termination of the disease leaves the labia somewhat enlarged. Subsequent attacks occurring perhaps weeks or even years apart, each leave the tissues still further enlarged, until they become pendulous and may weigh thirty or forty pounds. When the enlargement is as great as this, there is a great deal of friction in any form of effort, and the urine which is voided finds its way over the surface, where it is apt to decompose and act as a poison. It is for these reasons that inflammation of the surfaces, with ulceration may occur.

Prognosis—Being merely an increase in the quantity of tissue, the prognosis under adjustments is good, as it is in tumors. However, the extent of the tissue which must be reduced, must be considered in each case.

Varicose Veins of the Vulva

Definition—An incoordination wherein the veins of the vulva become knotty, dilated and tortuous.

Etiology—Active P. P. Passive, local and P. P. Varicose veins are the direct result of impingement on the motor nerves which supply the veins of the vulva. Because of this impingement, Innate is unable to transmit to the tissues involved the full percentage of motor impulses, and as a consequence the vessels are not capable of retaining their size under the constant pressure to which they are subject. In the passive form, there are other conditions which enter into the production of the varicose veins. It may be a prolapse of the uterus, a tumor in the pelvis, or any other cause which would press upon the vessels draining the vulva, and if this is the result we not only have a subluxation producing pressure upon the nerves lead-

ing to the vulvar veins, but also upon those supplying the other organs affected. During pregnancy there are found the greatest number of cases, this because of the weakness of the venous walls, together with the pressure upon the drainage veins, which is bound to accompany pregnancy.

Symptoms—At the onset there is aching, burning, and itching in the vulva, usually the labia majora, and with a sensation of weight. The enlargement, entirely in proportion to the number and extent of the veins involved, is variable in size, boggy to the touch, and reddish or purple in color dependent upon the degree of stagnation in the blood. All the subjective symptoms are increased in severity by exercise or exertion, and in some cases a hematoma results from the rupture of one or more of the dilated veins. Oedema may appear and serve to add still further to the size of the already enlarged labia.

Prognosis—Favorable under adjustments.

Edema of the Vulva

Definition—An incoordination of the vulva wherein there is an effusion of serum into the surrounding connective tissue.

Etiology—Active, P. P. Passive, local and P. P. Edema may be associated with varicose veins, wherein serum from the blood escapes into the surrounding connective tissues from the walls of the distended veins. More commonly, however, the escape is made from the walls of the capillaries and is due to a lack of motor impulses in the walls of the arterioles, or to an excess in the walls of the veins. In the former event it would allow the arterial pressure to be transferred in part into the capillaries and thus produce an undue pressure here, and in the latter event it would dam back the blood into the capillaries, because its outlet would be diminished in size. Whether the former or the latter condition existed there would necessarily be a subluxation at P. P. affecting the motor

nerve fibers to such an extent that Innate could not maintain the normal tonicity in the vessel walls.

Symptoms—If the disease is present with general anasarca it is usually very severe and the distention is extremely marked. If the condition is a local one it usually affects one of the labia majora only, and to variable degrees. The swelling pits upon pressure and this in itself is distinctive of edema. At the onset the parts become slightly edematous and in a few hours or days this enlargement disappears. It recurs later, however, and with the intervals less and less it finally remains as a more or less chronic condition, varying, however, as to degree. With the exception of the discomfort associated with exertion, there is very little pain or itching.

Prognosis—Favorable under adjustments.

Hydrocele of the Labia Majora

Definition—An incoordination, wherein there is a collection of serum in that portion of the peritoneum which forms the canal of Nuck in the embryo.

Etiology—Subluxation at P. P. during development. Due to subluxations in the lumbar region of the mother, the foetus is often made to assume an abnormal position in the uterus, and as a consequence there are subluxations produced in the spine of the foetus, which persist even after birth. In the case of the hydrocele, the infant is suffering from subluxations of the lumbar vertebrae which renders it impossible for Innate to supply all parts of the pelvic viscera with the proper motor impulses. The canal of Nuck is normally present only in foetal life and is a sac which is formed by the peritoneum extending through the internal ring around the round ligament, and part way down the inguinal canal. After birth this peritoneal extension is withdrawn, and the canal is obliterated. Because, however, of the lack of motor impulses available in these tissues, it remains as a canal and allows the peritoneal

fluids to gather in it. Occasionally the tissues are so devoid of motor impulses that the canal of Nuck reaches down until it is visible outside the external ring and thus produces a swelling of the labia majora. If calorific nerves are also impinged, there is a local inflammation produced in the canal which may give rise to adhesions, and closure of the upper end of the canal.

Symptoms—If the extension downward is only slight the symptoms are not even apparent, and no inconvenience is experienced by the patient. If, however, the sac formed is large, there is interference in walking and in intercourse. The enlargement is elastic to the touch, and if adhesions are not present it disappears when the patient assumes the recumbent position. There is usually no pain associated with the condition.

Prognosis—Favorable under adjustments, although if adhesions have been formed the progress is slower than otherwise.

Inguinolabial or Anterior Hernia

Definition—An incoordination characterized by the descent through the inguinal canal of any part of the pelvic or lower abdominal viscera.

Etiology—Subluxation at P. P. A weakness of the peritoneum and its failure to withdraw is one of the first things which occurs, and this usually shortly after birth. Instead, however, of the canal filling with serum and forming an hydrocele, there is a descent of some of the abdominal or pelvic viscera which extends into and fills the sac. This may be a part of the omentum, part of the intestine, or even of the uterus or the ovaries. The organs which are found in the canal depend upon the character of the subluxation and the nerve fibers which are impinged by it. Innate, always able to produce 100 per cent is handicapped in transmitting the mental impulses to the pelvic and abdominal viscera. These impulses

are of the motor variety and their absence allows for the sagging of the organs to a lower position.

Symptoms—The symptoms are very largely dependent upon the structure which fills the sac. If a fold of the intestinal tract is contained, there are symptoms of indigestion or of constipation. The anterior part of the labia majora is enlarged by the distention, which is smooth, regular and elastic to the touch. If a part of the omentum is contained within the sac there are none of the digestive symptoms, and the only distinctive feature is that the enlargement is soft and boggy to the touch. If the uterus is contained within the sac it may be either in the pregnant or the non-pregnant state. In either event, however, the enlargement is hard, irregular in shape, and irreducible. The presence of the uterus or the ovaries in an anterior hernia is a rare circumstance. When the ovary is present the enlargement upon palpation displays an almond shape, and the peculiar sensation of nausea is manifested when any pressure is produced.

Prognosis—Favorable under adjustments.

Benign Tumors of the Vulva

Definition—Non-malignant tumors of the vulva.

Etiology—Subluxation at P. P. Expansion being one of the nine primary functions, its absence in any part of the body gives rise to atrophy, while if it is present in excess, a tumor results. In the case of benign tumors of the vulva, while this condition is rare, a subluxation in the lumbar region gives rise to excessive expansion which is expressed by the enlargement.

Symptoms—These tumors are of slow growth, and may be either multiple or single. Variable in size, they produce symptoms principally in a mechanical way. They may be so situated that they obstruct the flow of urine, or at least divert the course of the stream. If toward the posterior they tend to obstruct the anal canal and produce difficult defecation. If of

sufficient size and properly located, the tumor may interfere with walking and with sexual intercourse. Subject as it is to friction, there are always possibilities of inflammation from this fact and also because there is more or less excreta from the bladder which is apt to decompose on the surface. With inflammation there are ulcerations. Also these tumors are subject to secondary changes as they would be in any other location. The tumors most commonly found here are the fibroma, myoma, myxoma, lipoma, angioma and neuroma.

Prognosis—In all tumors the character of the tumor must be considered and the duration of it, in order to arrive at a satisfactory conclusion in respect to the prognosis. If of long standing the results are apt to be correspondingly slow, and if of large size the process of absorption will take longer than if it were smaller. The prognosis, however, of benign vulvar tumors is favorable.

Vulvar Cysts

Definition—An incoordination, characterized by the presence of a cyst or cysts in the tissues of the vulva.

Etiology—Subluxation at P. P. Cysts of the vulva are a rare condition, and are produced in several ways. Perhaps by the closing of the openings of the sebaceous glands, causing them to dilate and enlarge with their backed up fluids. Then, too, a collection of serum in the duct of Gartner or in vulvar lymphatics may produce the condition.

Symptoms—The enlargement is of various sizes, usually not more than that of a hen's egg. As in the benign tumors these cysts are subject to external friction and to the irritating discharges from the genito-urinary tract. As a result they may become inflamed, ulcerate and finally discharge their fluid. These cysts are usually found in the vestibule, and because they do not attain a great size, seldom give rise to undue discomfort.

Prognosis—Favorable under adjustments.

Cancer of the Vulva

Definition—A carcinomatous growth occurring in the tissues of the vulva, most often on the labia majora, but also on the prepuce, orifice of the urethra, perineum, or in other locations.

In General—We have here a malignant growth, developed from either the hypoblast or the epiblast, which grows rapidly as a rule, and undergoes secondary changes very rapidly also. This tumor is single, and contains a stroma of connective tissue for its support. Contained in this stroma there are dense plexuses of blood vessels and lymphatic vessels.

Etiology—Subluxations at K. P. and P. P. A subluxation at K. P. as well as in the lumbar region is present in this condition because the function of expansion is not alone involved. There is also a lack of elimination, which in time is productive of auto intoxication, emaciation, and weakness.

Symptoms—Among the first symptoms is that of pruritus vulvae, and this symptom continues with more or less severity throughout the entire disease. In the beginning the tumor discloses itself as a small hard nodule covered over with several layers of thickened epithelium. This growth continues to enlarge, usually rapidly, and later when of sufficient size to interfere with walking, it undergoes ulceration. As a result there is a thin, watery, foul smelling exudate, which later becomes muco-purulent, very offensive in character and contains much broken tissue. Ulceration in the cancer begins early and spreads rapidly. The base of the ulceration is irregular in shape, and somewhat hardened. As the ulceration progresses there is an infiltration into the more remote tissues and thus a continual progression of the cancer. Pain does not occur in the early stages of the disease and in some cases may be absent altogether. Hemorrhage is not common because the blood vessels are protected in large measure by the connective tissue walls in which they are held. The inguinal

glands are usually swollen and tender and in the later stages may undergo ulceration. This because of the fact that the carcinomatous growth possess lymphatic vessels which pass through the inguinal glands and there deposit toxins directly from the cancer.

Prognosis—Under adjustments the cancer will become softer, and smaller, and there are possibilities of its disappearing altogether. Complete results on malignant tumors are, however, comparatively rare.

Sarcoma of the Vulva

Definition—A sarcomatous growth of the tissues of the vulva, involving the tissues of mesoblastic origin and being malignant in character.

Etiology—Subluxations at K. P. and P. P. Sarcoma is a malignant growth as is carcinoma, but differs from the cancer in its derivation and in the character of its histological structure. In the sarcoma there is no connective tissue stroma and as a consequence the blood vessels are allowed to come into direct contact with the tissue cells. In fact the vessel wall is sometimes entirely absent and the blood is limited only by the cells of the tumor. In this tumor we have rapid growth and rapid degeneration. It is the combination of the K. P. and the P. P. subluxations that produces here a malignant growth. The former gives rise to imperfect elimination while the latter gives rise to excessive expansion.

Symptoms—Melanotic sarcoma differs from other forms in that it begins with multiple lesions, appearing as minute papillae on the surface, which are very painful. In other forms of sarcoma the original lesions are usually single. In the melanotic type the lesions first appearing are brown or black in color. As they expand, they coalesce to form a single sarcoma. This undergoes ulceration early, and, because of the manner in which the blood vessels are arranged, hemorrhages

are frequent. In sarcomata other than of the melanotic type the original papilla is single and of a deep reddish color. The growth is rapid and the size attained may be great; perhaps as large as a good sized cocoanut. In these sarcomata ulceration is not apt to occur except as the surface is inflamed and ulcerated from the friction of the surrounding parts. Hemorrhages, however, are very frequent in sarcomata, because of the thinness of the vessel walls here. It is seldom that the neighboring lymphatics are affected unless the toxins are carried to them indirectly by the blood stream. This because in the sarcomata there are no lymphatic vessels. Secondary changes of fatty or myxomatous degeneration may occur, or hemorrhagic cysts may result from either of these changes.

Prognosis—Under adjustments the tumor will become smaller and softer and while there are possibilities of its disappearing altogether, still complete results are rare.

Chancroids

Definition—Chancroids are soft, suppurating, non-syphilitic venereal ulcers.

In General—Chancroids are sometimes designated as soft chancres, but they should be in no way confused with the chancre of syphilis. Essentially syphilis is a constitutional disease not necessarily venereal in origin, although, because of the large percentage of cases which are first subject to venereal lesions, it has come to have the general meaning of being venereal. Chancroids, on the other hand, are distinctly a venereal disease, but are not constitutional, the distinctive feature of them being the lesions themselves. Chancroids are usually multiple and occur most often on the fourchette or the labia majora, although they are also found on the nymphae, vestibule, cervix, perineum, thighs, anus and lower abdomen. They are seldom found in the vaginal wall.

Etiology—Subluxation at K. P. and P. P.

Symptoms—The lesions of chancroids occur about five or six days after the suspicious intercourse, and never later than twelve days after. This should be remembered as a distinctive feature. The lesions are multiple and develop rapidly, and from these ulcers the inguinal glands become affected, usually however, one at a time. The glands inflame rapidly and also undergo ulceration and suppuration. The chancroids ulcerate and display undermined edges, and bases that are soft and pliable. From the bases of the chancroids there are formed numerous granules and a profuse purulent discharge is given off.

There is more or less difficulty in the healing of the chancroids because of their location. Here they are subject to the irritating secretions of the vaginal and uterine tracts, also to the urine, and they are kept in more or less of an irritated condition by the constant friction to which they are subject.

Prognosis—Favorable under adjustments. Strict cleanliness here as in all other parts of the body promotes a more rapid recovery.

Verruca Vulgaris

Definition—A small ordinary wart on the vulva, which may be productive of no symptoms or may give rise to the subjective symptoms of inflammation.

Etiology—Subluxation at K. P. and P. P. Impingement of nerve fibers emitting in the lumbar region make it impossible for Innate to properly deliver the mental impulses at the peripheries which end in the vulva. As a consequence the expansion impulses are in excess and the simple wart results, which becomes inflamed if there is a subluxation at K. P. of sufficient degree to materially affect the general excretion.

Symptoms—The simple wart may be either single or multiple. When multiple they may be arranged either in groups or in isolated areas. They vary in size from that of a

pin head to the size of a small pea. Their color does not vary materially from that of the surrounding membrane, and the structure may be either close and hard or loose and soft. There may be no subjective symptoms present, but if inflammation occurs there is pruritus, often very severe, and the verruca is red, painful and tender to the touch.

Prognosis—Favorable under adjustments.

Verruca Acuminata

Definition—Large masses of excessive tissue on the vulva, with indurated base and giving off a purulent excretion.

In General—This is known as the "pointed wart," the "venereal wart" or the "moist wart." This growth is most apt to occur upon those surfaces of the vulva which are moist, as the vestibule, the entrance to the vagina, the nymphae, and around the anus. Occasionally, however, they are found on the mons, the outer surface of the labia majora and on the inner surface of the thighs.

This venereal wart is so called because it is usually associated with gonorrheal inflammation, but this is not true in every case. However, where the moist wart exists it is usually found that gonorrhea is present in the latent if not in the active form. Sometimes the growth appears in pregnant women, where gonorrhea never has been present.

Etiology—Subluxations at K. P. and P. P. The subluxations at K. P. and at P. P. interfere with the functions of expansion and excretion in such a way that Innate cannot supply the vulva and the kidneys with the proper impulses for normal function and this particular form of excessive growth is the result.

Symptoms—The growth, unlike the verruca vulgaris is of large size, frequently spreading out to cover half of the entire vulva. They may be either single or multiple, and in appear-

ance they resemble a cauliflower mass, with deep fissures over the entire surface. If covered with epidermis they present the normal color of the surrounding tissues; if, on the other hand, they are not covered with epidermis they present a deep red or purple color. The discharge from the venereal wart is foul and offensive, largely because of the gathering of excrescences between the folds of the wart, and partly because of the gonorrheal excretion which is so often associated with it.

There may be inflammation, and if so the surface is tender and painful, interfering with walking and intercourse. If situated toward the anterior of the vulva the growth may interfere with the act of urination. There is a sensation of weight and heaviness in the vulva.

Prognosis—Favorable under adjustments.

Herpes Progenitalia

Definition—An incoordination marked by inflammation of the vulva, with the appearance of vesicle groups upon an inflamed base.

In General—This is merely a form of herpes which occurs on the vulva and should be especially distinguished from eczema.

Etiology—Subluxations at K. P. and P. P.

Symptoms—There are premonitory symptoms of tenderness and pain, with a burning sensation and slight itching. Later there may develop a slight temperature. There are small vesicles formed on the surface of the vulva, about the size of a pin head which do not rupture easily. They are, however, slow to heal and give off an excretion, sometimes purulent and with an offensive odor. The vesicles are of larger size than those of eczema and occur in groups. The subjective symptoms of herpes are very slight.

Prognosis—Favorable under adjustments.

Eczema Genitalium

Definition—An inflammation of the vulva, appearing as erythema, pustules, or vesicles and characterized by itching, infiltration and ultimately crust formation.

In General—There is a general dryness of the skin, due to the inactivity of the sudoriferous and the sebaceous glands. This, however, is especially manifested on the vulva because of the subluxation at P. P.

Etiology—Subluxations at K. P. and P. P.

Symptoms—The general symptoms of eczema are present here as in affections involving other parts of the body. The most distinctive symptom is that of intense pruritus. This is much more marked in eczema than in herpes. The eruptions also are smaller in eczema than in herpes, and they rupture spontaneously while those of herpes do not. If the pruritus is extremely severe the patient may become exhausted and weak from lack of rest. The disease may be either acute or chronic although the chronic form is the most common. Although found most frequently on the labia majora; the mons veneris, abdomen, perineum, anus, thighs, nymphae and the vagina may also be involved.

Prognosis—Favorable under adjustments.

Simple Dermatitis Vulvae

Definition—An incoordination of the epidermis and the papillary layer of the dermis, characterized by inflammation.

Etiology—Subluxations at K. P. and P. P. This is a simple inflammation the cause of which is given by most authorities as being the friction produced by the rubbing together of folds of skin especially in stout women and in infants. It is true that it usually begins in the genito-crural folds, either on one or both sides, and extends from here over the external genitals, over the thighs or upward over the ab-

domen. It is also true that the friction of the adjacent folds of skin has something to do with the beginning of the disease, but to say that that was the cause, would be to admit that all women who suffered from friction here were afflicted with the disease. This we know is not true. There must be a lack of elimination by the kidneys, and a consequent hyperactivity of the skin. This produces a change in the character of the skin secretions and excretions so that they, together with the constant chafing, produce first a congestive inflammation. If the K. P. region is adjusted the skin then maintains its normal secretion and excretion, and the chafing alone is not sufficient to produce inflammation. P. P. is adjusted in order that Innate may properly regulate the calorific and reparatory impulses to the affected parts.

Symptoms—The symptoms are entirely dependent upon the severity of the inflammation. If it is severe there is a serous discharge from the affected surface; which, passing over the inflamed parts, gives rise to an extreme burning and itching. If the inflammation is mild there are only symptoms of slight itching and burning.

Prognosis—Favorable with adjustments and common sense cleanliness.

Erysipelas of the Vulva

Definition—A rapidly spreading inflammation of the vulva, involving the skin and mucous membranes with their underlying connective tissues.

Etiology—Subluxation at C. P., K. P. and P. P. There are some cases of erysipelas which undoubtedly call for a combination of C. P. with the K. P. and P. P. adjustments. This, however, must be decided in each individual case. Clinical findings have proven that in many cases the C. P. adjustment was all that was necessary in the restoring of normal temperature. On the other hand many cases have

been observed where only a K. P. adjustment was given and the temperature was thus reduced.

This leads us to the question of what produces fever. In the first place heat is produced at a given rate and it is dissipated at a certain rate and these two actions should always be in harmony in order to promote normal bodily temperature. Obviously an increase in heat production, or a decrease in heat dissipation will raise the bodily temperature. Heat is formed by oxidation, which is associated with organic activity; the more active the organ the greater the heat production. As glands are the most active organs in the body and as the liver is the largest of these, it is reasonable to assume that if the production is in excess, an adjustment at C. P. will promptly affect the temperature.

Heat dissipation is carried out by many means, but principally through the skin in radiation and evaporation. Clinical findings have proven that with an adjustment at K. P. there is a marked activity in the excretion and evaporation through the skin, and thus, when it is a question of increasing the elimination, we adjust K. P. Of course P. P. is adjusted as the local, because it is here that the impingement occurs, making the area of the vulva the place where the other deficient functions are manifest.

Symptoms—The onset is associated with chilliness or chills, with nausea and perhaps vomiting. There is a sudden rise of the temperature to 102 or 104 degrees, reaching its height on the third day, when it may be as much as 105 degrees. On the seventh day the fever falls by crisis, but may again rise if the inflammation continues. With the increased temperature there is an increase of the pulse as an adaptative measure, perhaps to 120 or even more. The pulse, however, is usually of good volume unless the inflammatory condition is very severe, when it becomes weaker. The tongue shows a whitish or yellowish furred surface. As in all fevers the urine

is highly colored and scanty. If the inflammation is extremely severe, there may supervene the typhoid status.

At the onset there appears a swollen and slightly inflamed area, wherein the skin is stretched tightly and given a polished appearance. There are well defined limitations to this involved area, although it is not always regular in contour. There are usually projections of inflamed and swollen tissues extending from the main area into the surrounding parts. If the inflammation is severe, there appear on the surface of the swollen area, numerous vesicles filled with serum. The inflammation attains its greatest severity on the third day.

About three days after the termination of the fever the process of desquamation begins, the vesicles in the meantime having dried up, and the swollen area having assumed its normal contour and taken on a reddish-yellow color.

Prognosis—Under adjustments the disease should not run its course as here described. The inflammation, and the fever should respond very quickly and desquamation will occur immediately following these changes.

Diphtheria Vulvae

Definition—An incoordination of the vulva, characterized by the formation of a fibrous exudate on the mucous membrane of the vulva and vagina, and associated with the presence of the Klebs-Löffler bacillus.

Etiology—Subluxations at C. P., K. P. and P. P. The same contentions are held here as in erysipelas of the vulva, in regard to the C. P. adjustment. If the fever is the result of excessive heat production then the adjustment at C. P. is a necessity. If on the other hand it is the result of insufficient radiation, then K. P. and the local at P. P. are all that need to be considered. Each individual case presents special characteristics which should enable the adjuster to determine

whether to include C. P. or not. This can be determined somewhat by the symptoms, but the presence of a hot box at C. P. always indicates that an adjustment here is essential while its absence almost invariably precludes the necessity of such an adjustment.

It will be noted that in the definition of Diphtheria Vulvae we did not ascribe to the Klebs-Löffler bacillus the ability to cause the disease. Chiropractic does not admit that this bacillus or any other can produce disease. With clinical statistics involving thousands of cases which have been completely relieved by Chiropractic adjustments alone, we feel that it would be illogical to assume that any micro-organism is a causative factor. On the other hand we can offer no other explanation of so-called contagious and all other diseases, than to say that they are produced by subluxations in the spine.

We do not deny the presence of the bacillus in many diseases, but as these micro-organisms are essentially scavengers, it is our contention that they are the result of disease rather than the cause. Many cases are on record where germs are shown to be present in tissues and yet the patient will not show the symptoms of that disease which the organism is credited with causing.

Symptoms—The disease begins with a sudden onset, and the first symptoms are those of chills, headache, and a general aching of the muscles of the body, more especially those of the back and thighs. The temperature rapidly mounts to 103 or 104. The vulva is red and swollen, due to the congestion, and the inguinal glands become swollen and tender. This latter because the lymphatic vessels, which drain the inflamed area, pass through the lymphatic glands of the groin, and there deposit some of the poisons which are taken up from the diseased vulva. If the K. P. region is normal and is caring for the excretions properly, there will be no effect from the poison, but if they are not, then this material is dammed back into these glands located in close proximity, and they undergo in-

flammatory changes. Very shortly a membranous exudate appears and spreads over the inflamed surface, adhering to the underlying mucous membrane. If at this stage the exudate thus formed is removed it leaves a raw bleeding surface beneath. On the eighth or tenth day suppuration begins under this false membrane, and it ultimately sloughs off. At this time the fever falls by crisis, and the recovery is rapid.

Prognosis—Under adjustments the prognosis is favorable and if taken in the early stages the period of fever is greatly reduced and the other symptoms are correspondingly relieved.

CHAPTER IV

DISEASES OF THE VAGINA

Cystocele

Definition—An incoordination characterized by a prolapse of the posterior wall of the bladder and the anterior wall of the vagina.

Etiology—Subluxation at P. P. It may be that this condition is the result of trauma received during labor, producing perineal lacerations or rupture of the vaginal wall. While there is a lower position assumed by the bladder, and while the anterior vaginal wall is also stretched and pushed downward and inward, this condition is not necessarily due to a lack of motor impulses in either of these structures. It may be that the supporting fibers of the pelvic floor have lost their tonicity, due to a lack of motor impulses supplied to them, and that the bladder and vaginal walls assume unnatural positions because of this fact. Then, too, if sub-involution of the uterus occurs following pregnancy, its very weight adds an impossible burden to the supporting ligaments and floor, and the uterus becomes prolapsed. This inverts the vaginal wall, resulting in the formation of a cystocele.

In any of these conditions, however, the causative subluxation is found at P. P.

Symptoms—The symptoms are entirely dependent upon the severity of the condition. There is, however, even in slight cases, a sensation of vulvo-vaginal fullness when the patient lowers the diaphragm in straining. In the more severe cases this sensation of fullness is present at all times when the patient is in the upright position, and more especially when

the bladder is filled with urine. If the uterus is involved in prolapse, there is the additional sensation of dragging and weight, with aching in the lumbar region and this also is more severe when the patient is in the upright position. Urination is difficult because there is ineffectual bladder contraction, and the abdominal contraction only serves to increase the size of the pouch formed. When the patient assumes the recumbent position the symptoms of fullness and pressure disappear. The enlargement is felt as an elastic mass, and in many cases can be seen at the vulvo-vaginal opening. Its size, of course, varies with the degree of bladder distention.

Prognosis—Favorable under adjustments.

Rectocele

Definition—An incoordination characterized by a prolapse of the anterior wall of the rectum and the posterior wall of the vagina.

Etiology—Subluxation at P. P. It may be that this incoordination is the result of trauma received during labor, producing perineal lacerations or rupture of the vaginal wall. In this disease as in cystocele, the incoordination is not necessarily due to lack of tonicity in the vaginal and rectal walls. These structures are supported, together with other pelvic organs, by ligaments and by the pelvic floor. If the ligaments are elongated, due to lack of motor impulses, it places an undue strain upon other parts which they are incapable of maintaining. Then, too, sub-involution of the uterus, resulting in prolapse, inverts the vaginal wall. The disease is more apt to occur immediately following pregnancy, because of the danger at that time of rupturing supporting structures, and also because, at that time, the vaginal wall is undergoing involution and if this change is not complete, rectocele results. Of course during pregnancy, because of the increased weight, pre-existing subluxations in the lumbar region are often increased

so that their results are much more noticeable after delivery.

Symptoms—There is a sensation of distention at the vulvo-vaginal opening, which is mild or severe depending upon the degree of relaxation. As in cystocele this is more noticeable while straining or while in the upright position. Somewhat greater fullness is felt at the times when the rectum is filled with fecal material. There is weight, and a sensation of dragging, together with lumbar aching when the uterus is involved in prolapse. Defecation is difficult because as peristalsis occurs it forces the fecal matter into the already distended pouch. Also any abdominal contractions are ineffectual because of the altered position of the rectum. Upon palpation the tumor appears as a soft globular mass, which is easily distinguished from that of cystocele, and which is not relieved upon urination.

Prognosis—Favorable under adjustments.

Vaginal Hernia

Definition—An incoordination, characterized by the downward extension of the peritoneum either behind or in front of the vagina, the cavity of which is filled with pelvic viscera.

Etiology—Subluxation at P. P. It is possible that this condition may result from trauma and is not necessarily produced by lack of mental impulses. It is usually, however, the result of a deficiency of motor impulses, involving the tissues supporting the vesico-uterine fold, or of those supporting the cul-de-sac of Douglas. In this event the folds of peritoneum forming these sacs descend to a lower level than the normal, and may assume such proportions that the structures contained produce a visible dilatation. The motor function is involved at any rate, and the impingement of the motor nerves in the lumbar region cut off the supply of these impulses to such a degree that parts of the peritoneum and the contained

structures assume an abnormally low position. The enlargement, whether anterior or posterior to the broad ligament, forms a projection that is distinctly visible at the posterior part of the labia majora.

Symptoms—Dependent upon the degree of dilatation of the hernia, the symptoms are correspondingly variable. If, however, the relaxation is of any marked degree there is a distention of the tissues in the vulvo-vaginal region, and to the touch this tumor feels doughy and soft, although more tense and resisting upon straining. When any considerable pressure is applied the tumor disappears with a soft gurgling sound and if the patient is in the recumbent position it does not reappear until the patient strains or assumes an upright position. If the relaxation is posterior to the uterus there is very apt to be constipation from rectal stenosis, and if folds of the small intestine are contained in the hernia various digestive symptoms may develop.

Prognosis—Favorable with adjustments.

Vaginitis

Definition—An incoordination of the vaginal mucous membrane characterized by inflammation.

Types—

- Simple acute vaginitis.
- Simple chronic vaginitis.
- Gonorrheal vaginitis.
- Granular vaginitis.
- Senile vaginitis.
- Emphysematous vaginitis.

Simple Acute Vaginitis

Definition—An incoordination of the vaginal mucous membrane characterized by inflammation and a profuse exudate.

Etiology—Subluxation at C. P., K. P. and P. P. Congestion may be present in any tissue without inflammation, but in inflammation, congestion is one of the cardinal features. If then, congestion occurs, due to damming back of the blood into the capillaries or to a relaxation of the capillary walls, more oxygen is available in the tissues and more marked inflammatory symptoms develop, should inflammation already exist. However, a local subluxation is necessary to produce true inflammation, but while studying any form of vaginitis it is well to bear in mind that there may be conditions, such as pelvic tumors, which are producing congestion and making the symptoms of inflammation extremely severe. In simple inflammation it is also possible to note vaginal rupture, especially following delivery and when this is true, it may be a source of difficulty because of abnormal secretions finding their way to the exposed surfaces.

Symptoms—Backache, together with sensations of heat and pain in the vaginal mucous membrane, are the first symptoms which present themselves. There may or may not be a rise in the bodily temperature, but if the inflammation is extensive there are usually gastro-intestinal symptoms. In the beginning the secretion from the mucous membrane is scanty, but within two days it increases rapidly in quantity until it is very profuse. It also changes in character, becoming of a thick creamy consistency, and yellowish or greenish-yellow in color. As a rule this discharge becomes muco-purulent or purulent in character and is quite offensive. The severity of the symptoms is dependent entirely upon the severity of the inflammation, and this in turn is dependent upon the degree of impingement existing in the lumbar and K. P. regions. If the menstrual period occurs during an attack of acute vaginitis, the discharge from the uterus serves to produce a greater degree of irritation upon the already inflamed membranes and while the flow continues the inflammation is more severe.

It is seldom that simple vaginitis, either of the acute or

the chronic form extends to the urethra, and this fact should be borne in mind in distinguishing it from the gonorrheal form. It is not unusual, however, for the vulva to become involved with the vagina in this type of inflammation.

The mucous membrane of the vagina becomes red, swollen and is somewhat tender to the touch. It is seldom, however, that the entire surface of the membrane becomes involved and usually there are discernable, between the inflamed areas, patches of healthy tissue. It is due to the fact that the profuse purulent exudate is continually pouring over the mucous membranes of the vulva, that the mucous membrane here usually becomes involved. It should also be remembered that the nerve fibers emitting from the lumbar region, supply the tissues of the vulva as well as those of the vagina, and that an impingement on the fibers of one is very apt to be associated with an impingement on those supplying the other.

Prognosis—Favorable with adjustments.

Simple Chronic Vaginitis

Definition—An incoordination of the vaginal mucous membrane, characterized by thickened tissue, dark red or bluish-red discoloration, leukorrhea, and usually remittent attacks.

Etiology—Subluxations at K. P. and P. P. This is a condition resulting from pressure upon the nerves supplying the mucous membrane of the vagina, but more especially the secretory fibers. Here, as in the other forms of inflammation, there is every probability of its resulting following a childbirth. At this time there are intense muscular contractions, both of the striated and the non-striated fibers in the pelvic and abdominal regions, together with a temporary displacement of the various viscera of the pelvis, and subluxations are very apt to result therefrom. Calorific nerve fibers are not

always involved in the chronic form of vaginitis and as a result there are none of the objective symptoms of inflammation. In fact in many cases the only discomfort to the patient is the leukorrheal discharge, which is very profuse.

Symptoms—The distinctive feature here is the vaginal discharge, which differs from that of the acute form in that it is rarely purulent in character. Yellowish in color, mucous in consistency, it is usually profuse, and by continually bathing the membrane of the vulva, and the skin of the thighs, it acts as an irritant here giving rise to pruritus, which may be severe or mild. The degree of pruritus depends upon the character and quantity of the excretion, and in large measure upon the hygienic condition of the patient. The general health may be affected, due to the constant leukorrhea and the consequent pruritus and loss of sleep.

The mucous membrane is of a dark red or bluish-red color, and between the affected areas are patches of healthy tissue. It is seldom that a purulent exudate is present in the chronic form unless there is a gonorrheal infection. As a rule the inflammation gradually becomes less and less in the area it involves until finally only the membrane in the cul-de-sac behind the uterine neck is apparent. Here the inflammation remains, giving rise to practically no symptoms except during pregnancy and menstruation. At these times there is some congestion and a material increase in the exudate.

Prognosis—Favorable with adjustments.

Gonorrheal Vaginitis

Definition—An extreme incoordination of the vaginal mucous membrane, characterized by inflammation and associated with the presence of the gonococcus of Neisser.

In General—One of the most severe forms of vaginitis, this disease may be acute or chronic, primary or secondary. It may begin as an acute condition and extend into the chronic

stage, but it more often begins as a sub-acute inflammation without producing marked objective symptoms. The disease is more apt to be secondary than primary. This is because the character of the secretion of the vaginal membrane is one which tends very strongly to neutralize any abnormal substances coming in contact with it. This, however, is not true in children and for this reason, primary gonorrhea of the vagina is more common here than in the adult.

Etiology—Subluxation at C. P., K. P. and P. P. In gonorrhea there is an exudate given off from the mucous membrane which acts as a poison when brought in contact with another mucous tissue. If now the tissue which the excretion comes in contact with is not in a normal resistive condition, due to impingement on the nerve fibers leading to it, then it cannot neutralize the effect of the poison and inflammation results. It should, however, be borne distinctly in mind, that the subluxation producing the impingement is the cause of the gonorrhea, and that the poison brought in contact with the tissue is a condition which is associated with the impingement. This contention is thoroughly in accord with the basic principles of Chiropractic. If one has a normal spine in the lumbar region, and if the K. P. region is in normal condition, then the elimination of the patient is normal, and when poisons, such as those resulting from gonorrhea, are brought into contact with the mucous membranes of the generative tract, they are neutralized by those given off and have no ill effects. It is for this reason that every individual coming in contact with the excretion of gonorrhea does not become affected. On the other hand if there are subluxations in the regions of K. P. and P. P., and if the secretions of the generative tract are not properly formed to neutralize the effects of the poisons of gonorrhea, then the disease results and can only be eliminated by the adjusting of the subluxation. When this is done the excretions are again normal, the poisons of gonorrhea are neutralized, and health is the result.

Symptoms—In the acute form the symptoms are practically the same as those found in the simple acute vaginitis except that they are usually more severe. It must be remembered, however, that with the gonorrheal form there is more apt to be involvement of the surrounding organs, such as the urethra, the vulva, the cervix, etc. Furthermore, it must be remembered that gonorrhea is most apt to make its first appearance in the cervix; the next portion of the tract most apt to be affected is the urethra, and next the vulva. In fact primary gonorrheal vaginitis is very rare, it being a disease that usually appears in some other part of the generative tract and extends to the vagina, thus becoming secondary here.

In the gonorrheal form of vaginitis the entire surface of the vaginal mucous membrane may be affected, or the membrane may be inflamed in spots, with intervening patches of healthy tissue between the involved areas. If the condition is one secondary to a urethritis and vulvitis, only the lower part of the vagina is apt to be affected, while if it is secondary to a gonorrheal condition of the cervix, usually the cul-de-sac alone is involved.

In the chronic form the symptoms are not different than those found in the simple chronic form of vaginitis except that there is a much greater tendency for the disease to become latent, and the remittent attacks which occur during the period of pregnancy and menstruation are much more severe. There is also the difference that in the gonorrheal form the excretion is either muco-purulent or purulent while in the simple form it is mucous.

Prognosis—The prognosis under adjustments is excellent.

Granular Vaginitis

Definition—A common form of inflammation of the vaginal mucous membrane, characterized by infiltration of the papillae in the vaginal wall.

Etiology—Subluxations at K. P. and P. P. This disease, otherwise known as papillary vaginitis, is so named from the fact that the infiltration of fluid in the mucous membrane of the vagina causes the minute papillae which are present in the wall here to become distended and to thus produce the appearance of granules. It is the most common form of vaginitis, and results from simple or gonorrheal vaginitis or from the congestion incident to pregnancy. In any of these events the disease is directly traceable to a nerve impingement in the lumbar and K. P. regions producing one of the two forms of inflammation, or allowing for a relaxation of the ligaments supporting the uterus, thus a prolapse of that organ and a consequent pressure upon the great veins draining the vaginal wall. By adjusting the existing subluxations the inflammation disappears from the vaginal wall and thus the infiltration can no longer exist. If it is a condition associated with pregnancy, then the ligaments, by assuming their normal tonicity hold the uterus in normal position and thus prevent the pressure which would otherwise occur upon the veins draining the vaginal wall.

Symptoms—The vaginal mucous membrane is red, congested and very tender to the touch. There are scattered over the entire vaginal surface and over the surface of the cervix, small hemispheres which give to the surface its granular appearance. These are the papillae of the mucosa which have become infiltrated with serum which has escaped from the capillaries of this area. Resulting from this infiltration the cells of the vaginal glands are continually bathed in large quantities of fluid and with the function of secretion in excess, there results a profuse exudate. This exudate, escaping from the vaginal tract, acts as an irritant upon the sensitive membranes of the vulva and this sometimes results in an eczematous eruption here.

Prognosis—Favorable under adjustments.

Senile Vaginitis

Definition—An inflammation of the vagina, occurring after the period of menopause, and characterized by adhesions of the vaginal wall.

Etiology—Subluxations at K. P. and P. P. This is a disease which occurs in most women past sixty years of age. After the menopause, the child bearing period is past and there is no longer necessity for Innate to supply the tissues of the generative tract with as large quantities of nutritive material. As a result the generative organs usually begin to atrophy at this time and the mucous membranes to become dry and contracted. It is at this time the effect of a slight impingement on the fibers passing to the vaginal mucous membrane is most noted. If, at this time, there is a deficiency in the secretion to keep the membranes moist, then the surface cells become dry and hard, and scale off as they would from the epidermis if it were extremely dry. This leaves exposed the underlying connective tissues, unprotected by epithelial cells and with the walls of the vagina in contact with one another. The friction which is always present to a greater or less degree sets up a slight congestion in these abnormal surfaces and, as an adaptive process, Innate sends out branches from connective tissue cells which ultimately form a plexus and produce adhesions between the two adjacent walls. So far as the adhesions are concerned they are purely adaptive and are the protection which Innate offers to two surfaces which are constantly undergoing friction and which are not supplied with the proper lubrication and epithelial protection.

Symptoms—In the beginning the patient suffers from no symptoms other than a thin watery, serous discharge, which is intermittent and is not particularly profuse. It may be, however, that this secretion will be streaked with blood occasionally, due to the loss of the epithelial cells and consequent exposure of the underlying blood vessels. There is a sensation

of weight in the pelvis, not because of any actual increase in the weight, or because of a congestion, but rather because of the contraction of the tissues of the vagina and the vulva, and the consequent lowering of the uterus.

It may be that the discharge from the vagina will irritate the membranes of the vulva which at this period are undergoing similar changes to those of the vagina. If so, there is in addition the existence of a burning sensation in the vulvar area. Intercourse is at first difficult and later, as the adhesions continue to form, it becomes entirely impossible.

The appearance of the vaginal mucous membrane is distinctive. The surface is found to be smooth and contracted, the entire membrane bathed in a thin serous and scanty discharge, and the canal markedly decreased in size. Over the entire surface there are spots of ecchymosis and ulcerations which are only superficial. However, it is these ulcerated and raw surfaces which, lying in contact with one another, finally form the adhesions that occlude the vaginal canal. The contractions in the vaginal wall together with the ulcerations which are formed at this time often distort the canal very materially.

Prognosis—If the Chiropractor adjusts the case in its very early stages before Innate has formed the adhesions as an adaptative measure, then the prognosis is excellent. If, however, adhesions are already formed, they will remain just as any scar tissue will remain, and adjustments are of no avail in tearing down the work which Innate has so admirably done. The results, however, on the leukorrheal discharge and the ulcerations are favorable at any stage in the disease.

Emphysematous Vaginitis

Definition—An incoordination in the vaginal mucous membrane, usually occurring in pregnant women, and characterized by the formation of minute gas cysts on an inflamed and reddened base.

Etiology—Subluxations at K. P. and P. P. This condition is an inflammation of the congestive form. Primarily there may be a subluxation in the lumbar region producing pressure on the motor fibers leading to the ligaments supporting the uterus. These being weakened, they allow the enlarged and heavy organ to assume such a position that it presses upon the veins draining the vaginal tract. If it does not occur in the pregnant state the congestion is the result of obstruction, due to involvement of some other organ or perhaps even of the empty uterus. In fact any condition in the pelvic viscera which would produce pressure upon the drainage veins of the vagina, might be responsible for the congestion. At the same time there is a lack of nutrition impulses being supplied to the cells of the vaginal wall, and as a result they are unable to take from the fluids which bathe them, all the materials which are needed in their metabolism. Some of the elements are then left in the form of gases in the tissue wall and as a result form little pockets here.

Symptoms—There is a slight exudate and a slight feeling of fullness, but with these exceptions the patient feels no ill effects.

Upon examination it is found that either a small area is involved or it may be the entire surface of the vagina and even the vaginal surface of the cervix. There exists a red and inflamed base and upon it a number of small white cysts filled with gas. If they are punctured they immediately collapse, but if allowed to remain they may disappear in one of two ways: They may rupture and leave, beneath, a superficial ulcerated surface, or they may dry up and desquamate.

Prognosis—Favorable under adjustments.

Vaginal Cysts

Definition—An incoordination of the vaginal wall characterized by the accumulation of fluid here, held in a capsule.

In General—If the cells remaining in the ducts of Gärtner or the ducts of Müller continue to secrete, and if this secretion is not carried off, then a cyst is formed on the site of the occluded duct. This same condition may exist in the Wolffian canal. If vaginal glands become occluded there are formed in the wall of the vagina small cysts which result from the accumulated products of the cells of these glands, failing to make their escape, dilating the walls of the gland to such a degree that cysts are formed. Then, too, there may be adhesions of any of the lymphatic ducts in the vaginal wall, and if this occurs the accumulated lymph is sufficient to produce a marked enlargement. If there is only one adhesion then the cyst is a unilocular one, but if there are several points along the tube where occlusion has taken place it is multilocular. There is also the possibility of the cyst resulting from the rupture of a blood vessel in the vaginal wall. If a haematoma is thus formed it may remain in the wall as a cyst for a long period of time and, finally with the solid substances absorbed, there would be no distinction between it and an ordinary hydatid cyst. Lastly there may be dermoid cysts formed in the vaginal wall, which are undoubtedly the result of prenatal subluxations, allowing for the development of dermoid tissue in the vaginal wall.

Although not common, vaginal cysts occur more frequently than any other form of vaginal tumor. They are usually about one inch in diameter, although they may be only of microscopic size or they may attain the size of a large orange. Ordinarily cysts of the vulva are single although occasionally they are multiple and arranged in rows. This latter condition is especially true when the Wolffian duct is involved and there are constrictions which divide the sacs of fluid.

Usually round in shape, the cyst may become oval or even pedunculated. By enlarging it destroys the folds in the

mucous membrane and if the latter atrophies or if inflammation of the cyst occurs, adhesions are formed which destroy the mobility of the membrane over the cyst. The fluid contained in the cyst is thin, watery and transparent, with usually a yellowish tint. It may, however, be of a brownish color due to the disintegrated cells of a former haematoma. The wall is thin and almost transparent.

Etiology—Subluxations at K. P. and P. P.

Symptoms—The symptoms are entirely dependent in their severity upon the size of the cyst and its location. If of small size the symptoms may not be apparent. If, however, of larger size, various conditions may manifest themselves.

If on the anterior wall and of fair size there is bound to be some alteration in the urethra, either in partially occluding it or in changing its course in some degree. If located on the upper part of the anterior wall it may affect the bladder in such a way as to decrease its capacity or even to occlude the opening of one of the ureters. If on the posterior wall and of sufficient size it may result in occlusion of the rectum and the consequent constipation and formation of hemorrhoids. There is a sensation of weight and fullness due to the tension placed upon the vagina at its points of attachment. It may act as a mechanical obstruction, preventing the entrance of the penis in intercourse. The condition is usually accompanied by leukorrhea because of the inflammation set up by the constant rubbing of the cyst upon the adjacent vaginal wall. If the cyst is of sufficient size and is placed in the lower end of the vaginal canal it may protrude to the external and is then subject to direct friction from the thighs in any form of exertion or in walking. In this event the membrane covering the cyst becomes atrophied, dry and hard and there may be formed on the surface ulcerations which ultimately form fistulous openings to the cavity of the cyst.

Prognosis—Favorable under adjustments.

Vaginal Fibromata

Definition—An incoordination characterized by overgrowth of the connective and muscular tissues of the vaginal wall producing a fibrous tumor.

In General—Of all the tumors of the vagina, the fibroma is the least frequent. It may occur as fibromyoma (muscular tumor with some white fibers intermingled), or myofibroma, (fibrous tumor with some muscular fibers intermingled). It is seldom that a true fibroma or a myoma appears. Usually these tumors are located on the anterior wall of the vagina and well toward the superior, but they may be upon the posterior wall and rarely are found on the lateral walls. In size the fibromata are not larger than an ordinary orange, although they may attain a diameter of as much as six inches and vary from that size down to microscopical dimensions. The growth begins as a sessile tumor and remains in that form until it has attained sufficient size to produce a downward pull. At that time it begins to lengthen out and finally produces a constricted neck and is pedunculated. It is then known as a vaginal polypus. The fibromata are essentially tumors of slow growth and do not attain their size ordinarily in less than two or three years. They are most frequent during the child bearing period but may be present at any age.

Etiology—Subluxations at K. P. and P. P. The fibromata are splendid examples of direct nerve impingement resulting in increase of the expansion impulses. This increase in the expansion impulses produces a more rapid expansion of the cells from the cell centers than exists in the normal condition, and the result is the formation of the tumor. By adjusting the subluxation the expansion impulses are restored to normal and the cells constituting the tumor gradually atrophy and are absorbed.

Symptoms—The severity of the symptoms is dependent upon the size and the location of the tumor in the vaginal canal.

If it is of small size it may exist for some time and not be discovered, and then it is usually by accident. As it attains a larger size, however, it offers more and more inconvenience. If located on the anterior wall and of sufficient size it may give rise to difficult micturition or to frequent micturition. If on the posterior wall and close to the external orifice so that it protrudes to the external it deflects the course of the urine and causes no little inconvenience. Also if it is on the posterior wall and projects toward the posterior into the rectum it produces constipation and hemorrhoids, the latter because of the obstruction to the veins draining the lower rectum and anal canal.

Because of the weight and the consequent traction upon the wall of the vagina, there are sensations of pressure and more or less lumbar pains. If large the tumor interferes with walking, intercourse or any form of exertion, although it is not increased in size upon straining, coughing, etc. Protruding into the vaginal canal these growths produce more or less friction which often results in a local inflammation and a consequent leukorrhea. The degree of hardness depends upon the relative amounts of muscular and fibrous tissue present. If the growth is small there is no alteration of the mucous membrane, but if large the membrane is tense over the neoplasm. The membrane, however, is freely movable unless inflammation has existed and produced adhesions. The leukorrhea is mucous or muco-purulent, with perhaps some blood intermingled, if ulceration has taken place upon the surface and exposed some of the blood vessels.

The fibroma can be distinguished from the rectocele and the cystocele by the fact that the latter are increased upon straining or coughing while the former is not. It is easy to distinguish the fibromata from the malignant growths because the former have a slow growth, no infiltration, and a regular outline, while the latter have a rapid growth, extend by infiltration and do not possess a regular outline. When the

fibromata become inflamed and ulcerated, however, it may be impossible to distinguish them from the malignant growths except by use of the microscope.

Prognosis—Favorable under adjustments.

Cancer of the Vagina

Definition—A malignant growth in the vaginal wall distinguished by carcinomatous cells and a fibrous stroma containing blood vessels and lymphatics.

In General—Cancer of the vagina is a tumorous growth either primary or secondary, but more often the latter. As a secondary growth it may result either from direct extension from the ovary or the uterus, or by metastasis from remote organs. In structure the neoplasm shows distinct walls of stroma between which are found alveoli filled with various types of cells derived from epiblastic or the hypoblastic layers of the blastoderm. Within the walls formed by the stroma are held the blood vessels and the lymphatic vessels which so richly supply the tumor, but these vessels are not found in the alveolar spaces. The growth spreads to involve surrounding structures by the epithelial cells of the alveoli breaking through the stroma and invading adjacent tissues.

After undergoing a rapid growth the tumor undergoes secondary changes, usually of fatty degeneration which reduces the enlargement to a pulpy, creamy mass. At this time there may be hemorrhage due to the perforation of the vessel walls during the processes of degeneration.

The disease may occur at any age, although it usually appears after the thirty-fifth year.

Etiology—Subluxations at K. P. and P. P. Although medical authorities have found no means of correcting the condition, the Chiropractor finds here that the subluxations are the cause and by correcting them he is enabled to bring relief to the patient. The subluxations produce an excess in

the function of expansion, and in that of calorific, while the impulses of nutrition and of reparation are below par. By correcting the subluxations and allowing for the free transmission of mental impulses, health is the result provided the centers from which normal tissue is developed are not destroyed by the secondary changes of the cancer. Of course, if that condition exists, then there is nothing to build upon and the prognosis is unfavorable.

Symptoms—There are two types of carcinomata which have a marked distinction; they are the epithelial carcinoma and the spheroidal celled carcinoma. In the former the growth usually occupies the upper and posterior wall of the vagina and covers a comparatively small area. It is first in the form of a papillary growth with a broad sessile base but later may become more or less pedunculated. In the latter the growth may be of two types, either encephaloid or scirrhous. In the former of these two the cells are similar to those found in the brain tissue while in the latter there is a characteristic hardness due to the presence of large quantities of fibrous tissue. In the spheroidal celled form the growth spreads out and involves large areas on the vaginal wall, sometimes extending all the way around and producing a marked constriction of the canal.

Because of the presence of the lymphatic vessels in the neoplasm the lymphatic glands of the groin, pelvis and abdomen become involved at an early period and show a distinct enlargement due to inflammation. Adjacent structures become involved through infiltration and as this involvement progresses it gives rise to a variety of symptoms. It is usually not until the latter stages that the ureters become affected, but when they do there arise the symptoms of hydronephrosis and uremia. When the secondary changes begin to appear there are perforations made into the adjacent cavities of the rectum and the bladder.

The discharge from the vaginal mucosa is one of the

earliest symptoms. At first it is thin and watery with an offensive odor, but as ulceration progresses it becomes thicker, purulent, and ultimately contains pus cells, feces, urine and broken down tissue. At this time the discharge is even more offensive.

Hemorrhage is a constant and a distinctive symptom. At first it appears in very slight degree following straining at stool, or sexual intercourse. Later, however, it becomes more profuse, and more frequent until that stage is reached where it is almost continuous, and large quantities of blood are lost.

In the later stages of the disease pain is an important symptom, and is present in the vagina, the rectum and the pelvis. The continuous leukorrhea acts as an irritant which affects the surface of the vulva and produces a constant pruritus.

There are constitutional symptoms of weakness, emaciation, and the cancerous cachexia. The gastro-intestinal symptoms are present here, and together with the constant production of toxins, and the continued loss of sleep from pruritus, results in a very rapid decline in the general health of the patient.

Prognosis—If taken in the early stages, before degeneration has taken place to such a degree that the centers of growth are destroyed, the possibilities under adjustments are excellent. If, however, the Chiropractor gets the case in the late stages when there is nothing left to build upon, then good results cannot be expected.

Sarcoma of the Vagina

Definition—A malignant growth in the vaginal wall distinguished by a preponderance of connective tissue, devoid of lymphatics, devoid of a stroma, and with the blood often

in direct contact with the tissue and not contained in blood vessels.

In General—The sarcomata are a type of malignant growth composed of connective tissue fibers and many connective tissue cells, all of which are similar to those found in embryonic tissue. The cells are of various kinds, either large or small, and differ greatly in shape, being round, spindle shaped or myeloid. The blood supply is very rich but the blood is not always contained in the blood vessels. Often the wall of the vessel becomes very thin and finally disappears altogether, leaving the blood to circulate in direct contact with the cells of which the tumor is composed.

The sarcomata always spring from connective tissue, although this tissue is sometimes isolated in one of the other three forms of elementary structures. The sarcomata is unlike carcinomata in that while the latter appears in later life the sarcomata is more apt to occur in early life. Like the carcinomata, however, it is not confined to any particular age and may be found in adults well advanced in years.

The sarcomata are more apt to spread by metastasis than the carcinomata because the minute particles are much more readily admitted into the blood stream. They are, however, less apt to affect the adjacent tissues through the lymphatic stream because they contain no lymphatics and thus this system is not apt to receive their toxins unless by osmosis through the serous system. It is for this reason that the lymphatic glands in the groin, pelvis and abdominal cavity are less apt to be involved in sarcoma than in carcinoma.

Sarcomata of the vagina are more common as secondary growths than as primary, usually extending from the cervix, although they may extend from any of the adjacent structures. Either hard or soft it is found that the harder growths are less rapid in development and slower in undergoing secondary changes while those which are softer and more vascular grow more rapidly and degenerate at an earlier period. The most

common form of degeneration is of a fatty character, although the secondary changes are not confined to this form. There may be calcification, ossification, or mucoid degeneration.

Etiology—Subluxations at K. P. and P. P. Here, as in carcinoma, authorities have been unable to find a means of correcting the condition, but the Chiropractor finds the causative subluxations, adjusts them and health is the result. The same functions are involved here as in carcinoma; those of expansion and calorific being in excess and those of nutrition and reparation being deficient. The degree to which the condition progresses depends upon the degree of pressure upon the nerve fibers and this in turn is dependent upon the extent to which the vertebrae are subluxated.

Symptoms—There are two varieties of tumors which appear as sarcomata. The first and most common is the round, circumscribed variety which first appears as a small papilla and grows with a broad sessile base. Ultimately, as it attains a greater size, it becomes more or less pedunculated and finally resembles a fibroid polypus. This type is of a reddish color and secondary changes occur in it very slowly. It is located on either wall of the vagina and at the lower extremity, as distinguished from the carcinoma which is found at the upper extremity. The second variety begins as a small papilia which spreads rapidly and becomes a diffuse, superficial growth. It may involve only a part of the mucosa or may extend to involve all the surface of the vaginal canal. When this occurs the opening is constricted so that intercourse and delivery is made very difficult.

While the lymphatic vessels and glands are involved in the carcinomata, this is not true in the sarcomata, unless the growth is of the melanotic type.

The leukorrhea is an early and constant symptom. In the beginning the discharge is of a serous character, later becoming more profuse and changing to a mucoid and finally to a purulent character. If perforations have been made

into the rectum and the bladder, this discharge is mixed with urine and feces. Also in the later stages there are broken down tissue cells, pus cells and large quantities of blood.

Hemorrhage begins in the sarcoma as in the carcinoma, with at first a slight discharge upon straining, intercourse or other form of exertion. These hemorrhages become more and more profuse until finally there are large quantities of blood lost and a consequent weakened condition of the patient.

Pain is a later symptom and does not occur until ulceration begins. From then on, however, it is a more or less constant symptom until the termination of the disease. This pain is not confined to the vagina but is felt in the rectum, bladder and other parts of the pelvis as well as radiating down the thighs.

Pruritus is constant, due to the continued exudate, and this causes the patient to lose much needed sleep and rest. The constitutional symptoms are the same as those found in sarcoma of other organs and tend to a general weakened and emaciated condition.

There is no way of distinguishing between sarcoma and carcinoma from the symptoms. The only way possible is through the use of the microscope, and, of course, this cannot be done without the use of surgery. However, this fact should be brought forcibly to the attention of the Chiropractor. It doesn't make any difference to him whether the tumor is a sarcoma or a carcinoma, as the tissues affected are the same, the functions involved are the same, and the causative subluxations are the same. Of course, a knowledge of the two diseases is well to have in order to more intelligently discuss them with your patient or prospective patient, but so far as the effectiveness in dealing with the condition is concerned, it is not necessary.

Prognosis—If the Chiropractor begins adjusting a case of sarcoma in the early stages the progress can be arrested and

the disease never progress to a fatal termination. If, however, the case does not begin taking adjustments until secondary changes have progressed to such a degree that they have destroyed the centers of development, there is no tissue present for the mental impulses to control and recovery is impossible.

CHAPTER V

DISEASES OF THE UTERUS

The Uterus in General

The Normal Uterus—In the normal position the uterus lies between the bladder and the rectum, in the pelvic cavity, and its axis forms a right angle with the axis of the vagina. Normally the uterus is slightly anteflexed, resting upon the bladder, and with the cervix pointing backward toward the coccyx. It is held within normal bounds by the ligaments which prevent too great movement, although subject to some variations in its position, dependent upon the positions and conditions of the surrounding organs. Thus the act of inspiration lowers the diaphragm and compresses to some degree all the abdominal viscera. This forces the uterus lower in the pelvis, and when expiration occurs and this pressure is released the uterus ascends slightly. Again, if the bladder is distended the uterus is forced to assume a more nearly upright position, and when the rectum is distended it forces it forward. If the woman assumes the upright position the uterus is forced to assume a lower position in the pelvis than when she assumes the recumbent posture and thus removes the pressure from the abdominal viscera.

Factors concerned in the support of the uterus: There are in reality several factors which are vitally concerned in maintaining the normal position of the uterus and no one of them is independent of the others. They are:

The floor of the pelvis.

The pelvic viscera.

The action of the abdominal cavity.

The uterine ligaments.

As the pelvic floor offers itself as a foundation for all the organs of the pelvis and indirectly as a foundation for those of the abdominal cavity, it can readily be seen that any change which serves to destroy the integrity of this structure, also serves to permit a prolapse of any or all of the pelvic and abdominal viscera. The most common cause of loss of integrity of the pelvic floor is the laceration of the perineum, which occurs in child birth. When this occurs there is no longer the support offered for the uterus, and the pressure of the abdominal viscera forces it to a lower position in the pelvic cavity. The vagina being no longer a closed canal, does not act as a support for the bladder and it becomes prolapsed toward the posterior and forms a cystocele. Furthermore, with the perineum absent as a guiding wall, the fecal material is not forced backward into the anal canal, but forward against the vaginal wall and thus a rectocele is formed. With the bladder and the rectum prolapsed all the other pelvic organs are lowered and there is no foundation for the uterus to rest upon. Besides all this, the force required in accomplishing the acts of defecation and urination is increased and this serves to force the uterus even lower than it would otherwise be.

Indirectly, then, the pelvic floor acts as a support for the uterus in that it supports those organs which the uterus rests upon. For the same reason it can be seen that any factor which changes the position of the pelvic organs also changes the position of the uterus. Therefore the pelvic organs are all more or less concerned in supporting this structure.

The abdominal cavity with its great viscera serves by the support offered by its walls and the diaphragm to hold these heavy organs up so that they will not rest too heavily upon the organs of the pelvis. If for any reason this retentive ability of the abdomen is destroyed, then the abdominal viscera becomes prolapsed and rest a great deal of weight upon the pelvic organs. In this way, then, the walls of the abdomen

are concerned in maintaining the normal position of the uterus and other pelvic organs.

While the ligaments are concerned partly in supporting the uterus in its normal position, they are also utilized in checking the movements of the uterus so that it does not change too much in any direction. The sacro-uterine ligaments prevent too great a forward movement and the round ligaments do not allow for too great a backward movement. It is these two ligaments which are greatly concerned in preventing versions and flexions to the anterior or posterior. The broad ligaments offer themselves as a real support more than any other uterine ligaments. Between the folds of the broad ligament the uterus swings as in a hammock, and thus it is not only supported from the superior but is prevented from swinging too far forward or too far backward. The broad ligament also prevents versions or flexions occurring laterally. If mental impulses are not properly supplied to the tissues of the ligaments, their tonicity is lost and they become slack. When this occurs it allows for too great movement and the result is a uterus which is either tipped or flexed from its normal position.

Normally the uterus is flexed and bent toward the anterior resting upon the bladder. It is held in this position by the pressure of the abdominal viscera. If the tissues of the round ligament are relaxed due to a lack of motor impulses it allows the uterus to bend back and the folds of the intestine to find their way in between the bladder and the uterus. Thus the downward pressure of the abdominal viscera is brought, not upon the posterior wall of the uterus which in turn is supported by the bladder, but upon the anterior surface, and the uterus is forced back toward the rectum, where it receives very little support.

Prolapse of the Uterus

Definition—An incoordination wherein the uterus assumes a position in the pelvic cavity lower than the normal.

In General—The degree of the prolapse depends entirely upon the extent to which the supporting factors are involved. If the uterus has not descended low enough to escape from the vaginal cavity it is known as an incomplete prolapse, while, if it has descended so that it protrudes to the external, it is known as a complete prolapse.

When the prolapse is incomplete the uterus assumes a position posterior and somewhat inferior to its normal position. If the prolapse is marked and yet not complete the cervix is found very close to the external vaginal opening and the walls of the vagina are relaxed so as to form a cystocele or a rectocele.

When the prolapse is complete all the organs of the pelvis are more or less affected. When the patient strains or assumes the erect position the uterus descends from the vaginal cavity and is exposed to the outer world. It may be that the marked abnormal position of the uterus causes an obstruction of the veins draining the uterus and a congestive inflammation results. Hypertrophy may result from this slow inflammatory change, or edematous swelling may exist due to the high pressure of blood in the capillaries and the relaxation of the capillary walls. The mucosa of the uterus may become thickened and congested, and in cases of long standing there usually is atrophy of the body and elongation of the cervix.

The vaginal wall is everted and exposed to the external air and the friction of the thighs produced in walking and other forms of exertion. This often gives rise to a hardened and dry condition of this mucous membrane, and if inflammation supervenes there may be formed, on the exposed surface, ulcerated spots. The anterior and the posterior ligaments follow the changed position of the uterus and also

escape from the pelvis. Naturally the posterior wall of the bladder and the anterior wall of the rectum become prolapsed and this gives rise to difficulty in micturition and defecation.

As to the causes of uterine prolapse, it may be due to an alteration in any of the four factors given under the normal supports of the uterus. Of these, however, the most common is the loss of the integrity of the pelvic floor and the relaxation of the uterine ligaments. Subluxations in the middle or the lower lumbar regions produce direct impingement upon the fibers transmitting motor impulses to the tissues constituting the floor or the ligaments and a relaxation of these structures is the result. With the foundation taken away or materially weakened there is nothing left to support the uterus and it naturally assumes a lower position in the pelvis.

Etiology—Subluxations at P. P. or L. P. P.

Symptoms—The degree of involvement determines to a large extent the degree and the character of the symptoms. If the prolapse is slight the symptoms are correspondingly slight, and if pronounced the symptoms are correspondingly pronounced as a rule. Occasionally, however, cases are met with where there is a complete prolapse and there are no symptoms other than the mechanical ones offered by the uterus hanging between the thighs and interfering with the action of the lower limbs.

Usually there is backache which is increased by the erect position or any form of exertion, while it is relieved when the patient assumes the recumbent position. This pain is felt in the lumbo-sacral region and is of a dull heavy character. Pain is also felt in the pelvic region, sometimes radiating down the thighs, and is in the form of a bearing down or dragging sensation, affecting all the viscera of the pelvis.

If there is only a slight prolapse and if the uterus presses upon the wall of the rectum, it gives rise to a sensation of fullness here which is not relieved by defecation. If the prolapse is a complete one it allows the formation of a rectocele,

and the attendant constipation and hemorrhoids. Here also there is a constant feeling of fullness and occasionally there is inflammation of the mucous membrane lining the rectum, due to the fact that the feces long contained therein acts as an irritant. If there is a cystocele associated with the prolapsed organ, then there are the usual symptoms of this condition. The patient finds it impossible to entirely empty the bladder, due to the fact that there is a pouch formed in the posterior and inferior wall which assumes a lower level than the superior openings of the ureter. The abdominal muscles, when they contract to produce micturition, do not produce any great degree of pressure upon the bladder because there is no retaining wall at the posterior and the cystocele is made even more pronounced at that time. If the patient assumes the knee-chest position the urine can be more readily voided.

Headaches in the occipital or the vertical regions are common and may be constant or intermittent. It may be that there are gastric symptoms, but these do not occur in all cases. When they do there are nausea and sometimes vomiting, constipation and various symptoms of indigestion. If the condition exists for some time there eventually develop emaciation and weakness, due to improper absorption and assimilation. Neurasthenia is not an uncommon condition with uterine prolapse and may assume various forms.

Prolapse may or may not be the cause of sterility, although the greater the malposition the greater the possibility of sterility existing.

With the uterus in its unusual position there is always an obstruction offered to the drainage vessels and as a result congestive endometritis is a constant condition. With the blood vessels congested by this increased pressure, large quantities of serum escape into the surrounding tissues and continually bathe the uterine glands. The secretory nerves of the mucous membrane being impinged, there is an excessive action here and a consequent leukorrhea. This discharge may

be of a whitish color or of a whitish yellow color. Menorrhagia is a more or less constant symptom and results from the marked congestion of the uterus. Metrorrhagia may occur but it is not a common symptom.

Prognosis—Favorable either in the complete or the incomplete form under adjustments, although the time element must always be considered. If the prolapse is a severe one a longer course of adjustments is required than if it is incomplete.

Anteflexion

Definition—An anterior bending of the uterus due to relaxation of the uterine ligaments, to abnormality in the pelvic floor or to some other abnormality in some of the tissues or organs surrounding the uterus.

In General—During early life, and during intra-uterine life, the uterus is placed at an angle which forms its axis at about a ninety degree angle with the vaginal axis. During adult life the angle becomes somewhat more obtuse, due to the straightening up of the uterus to a more perpendicular position. In brief, anteflexion is a normal condition in adult life and never becomes pathological except when existing to a sufficient degree to produce endometritis, sterility or dysmenorrhea. In brief, the condition does not become an abnormality until a sufficient degree is reached to produce abnormal symptoms.

Etiology—Subluxations at P. P. Anteflexion of the uterus is not an uncommon condition and is more frequently found in women who have never borne children. An undeveloped uterus is sometimes associated with anteflexion of the uterus, but is not a causative factor, as many cases exist wherein the uterus is fully developed and normal in every other way. Excessive contractions of the sacro-uterine ligaments serve to draw backward the cervix and thus to tilt the fundus forward. Occurring in women who have borne chil-

dren it is usually the results of sub-involution, wherein the body undergoes softening, remains enlarged and allows the weight of the abdominal and pelvic viscera to force it downward and forward.

Subluxations in the lumbar region, serving to involve nerve fibers, motor in character, which supply the sacro-uterine ligament may produce this abnormality; then again it may be produced by impingement of fibers which result in excessive expansion impulses, thus increasing the weight of the uterus and allowing it to tip forward. Lack of nutritive impulses and thus the absence of fatty degeneration after pregnancy serves to increase the weight, to decrease the resistance and allow for the weight above to become effective. A decrease in the quantity of motor impulses supplying the vesico-vaginal ligament allows for a relaxation here and permits the sacro-uterine ligament to draw the cervix back and the fundus and body forward and down. Rarely subluxation in the dorsal region allows for prolapse of the stomach or other abdominal viscera and thus an increased pressure from above, producing excessive weight on the posterior surface of the uterus.

Symptoms—Dysmenorrhea is one of the most common symptoms of antelexion and is the result of obstruction in the cervical canal, due in turn to the pressure of the external os against the posterior vaginal wall or the congestion and consequent occlusion of the cervical canal.

Endometritis results during antelexion from obstruction of the veins draining the uterus and is a constant symptom of this disease. Resulting from this endometritis and endocervicitis the cervix becomes occluded and as a result the spermatazoa cannot find their way into the uterus and produce impregnation. Thus it is that sterility is often associated with antelexion.

Leukorrhea results from mechanical obstruction of veins draining the uterus. This mechanical obstruction primarily

dams back the blood into the capillary system and produces a passive congestion; thus the secretory cells are bathed with an excessive amount of fluid and take from this fluid excessive quantities of material.

Prognosis—The prognosis is favorable under adjustments with the time element always considered.

Posterior Versions and Flexions

Definition—A reto-version is a malposition of the uterus wherein the normal curve of the uterus remains the same and faces toward the anterior, but where the longitudinal axis is tilted in such a manner that the fundus is displaced toward the posterior, or the cervix toward the anterior, or both.

The retro-flexion is a malposition where the uterus bends backward and forms the concavity of the uterus toward the posterior and the convexity toward the anterior.

In brief, the uterus bends upon itself in retro-flexion, while the entire organ is tilted toward the posterior in retro-version.

In General—This is the most common form of malposition and exists in parous women more frequently than in nulliparous women. In conditions where the uterus atrophies after the menopause, it is usually retro-flexed.

The normality of the uterine position depends upon the normality of its supports and any condition which serves to produce abnormality in those supports may be designated as causative factors in retro-displacements.

Etiology—Subluxations at K. P. and P. P. The most frequent cause of posterior displacements is the injury resulting from labor or abortion. At this time the perineum becomes ruptured, due to too rapid distention and as a consequence the integrity of the pelvic floor is destroyed. When this condition exists it allows for the development of a rectocele and

the fecal material is forced downward and forward in the rectum rather than outward through the anal canal.

Greater force is required to produce the act of defecation and the consequent straining serves to produce a more upright position of the uterus. The constant bulging of the posterior vaginal wall ultimately destroys the integrity of the anterior vaginal wall and when it begins to prolapse it allows the bladder to assume a lower position in the pelvis. Thus the support of the bladder is taken away from the uterus and all three organs become prolapsed. For a time the uterine ligaments serve to hold it in position, but they gradually relax and allow it to descend to a lower level. The sacro-uterine ligaments, because they are heavier than the anterior ligaments, are the last to give way. In women who have borne many children in rapid succession, all the pelvic organs become weakened, providing there are causative subluxation in the lumbar region. This condition must not be lost sight of in considering the essential features of retro-displacement. Over-distension of the bladder forces the fundus of the uterus upward and backward, thus causing it to assume a more upright position. Persistent carelessness in allowing this over-distention is an important factor in producing permanent elongation of the supporting ligaments. As this condition is true of the bladder, it is also true of the rectum. When the rectum becomes distended with fecal material, it forces the cervix forward and produces a more upright position. While, as a temporary condition, there are no ill effects resulting, if allowed to become a constant pressure from the posterior, the sacro-uterine ligaments finally become distended and allow the uterus to continually assume an upright position. In either of the foregoing conditions subluxations in the lumbar region are essentially a causative factor as the motor impulses are deficient in quantity and the lost tonicity in the ligaments permits of their being stretched to an abnormal degree.

Innate has masterfully endowed the ligaments of the

uterus with sufficient tonicity to accommodate the ordinary physiological changes to which the organ is subjected, but when these changes become abnormal, either in degree or as to time, one hundred per cent of mental impulses may not be sufficient to overcome the changed condition. This is especially true where tumors develop in the surrounding viscera and grow to such a size as to force the uterus from its normal position. In minor degree constant overdilatation of the bladder or the rectum produces the same effect.

Sub-involution of the uterus following labor or abortion permits the uterus to retain an abnormally large size. When this occurs the weight becomes sufficient to exert an abnormal pull upon all the uterine ligaments and stretch them so that they are not able to perform their normal function. Thus sub-involution, while in itself produced by subluxation, may, as a secondary condition, be associated with posterior displacement. If impingement is produced in the lumbar region upon the nerve fibers leading to the uterine supports, this organ is much more susceptible to abnormal allied conditions. Under this classification we may include: Improper manner of dressing in which the use of tight corsets and heavy weights suspended from the waist play an important part. In the former the abdominal viscera is compressed and forced downward upon the floor of the pelvis and the up and down movement of the diaphragm is markedly restricted so that the retentive power of the abdominal viscera is decreased in efficiency.

Many cases are associated with improper care following labor wherein the patient is kept lying too long upon the back and the weight of the uterus, at that time enlarged and heavy, serves to stretch all the supporting structures. Then, too, the use of a tight abdominal bandage following confinement serves to force the uterus back against the sacrum and if kept on for too long a time permanently stretches the ligaments.

Women whose employment requires them to remain standing for long hours and who are more or less careless

about emptying the bladder and the rectum are apt to suffer from retro-displacement. All those engaged in work which requires them to bend forward while sitting forces the abdominal viscera against the anterior abdominal wall and crowds the uterus back from its normal position.

This condition, while dependent upon several associated abnormalities in the pelvic organs, is always directly traceable to subluxations in the lumbar region and perhaps to associated subluxations at K. P. As examples: We have the excessive amount of expansion impulses in tumor of the surrounding organs which indirectly serve to displace the uterus. Also lack of nutritive impulses which are productive of subinvolution is indirectly the cause of many retro-displacements. Lack of motor impulses being supplied to the uterine ligaments produces a weakened condition here which, in itself, may give rise to posterior displacements or at least allow for associated abnormal conditions to more effectively displace either the fundus or the cervix.

Symptoms—Backache in the lumbo-sacral region, dull and heavy in character which is increased in severity by the assumption of the erect position, is a characteristic feature of the disease. A sensation of weight and bearing down throughout the entire pelvis and acute pains when the ovaries are also prolapsed is a common symptom.

Constant pressure upon the rectal wall by the displaced uterus destroys the sensitiveness of the mucous membrane here and constipation and hemorrhoids result. Very rarely is the bladder affected in posterior displacements, for the reason that a backward tipping or bending relieves pressure on the bladder rather than produces it. Occasionally, however, if the retro-displacement is extremely marked, the cervix of the uterus is thrown forward against the bladder, thus indirectly aiding inflammation here, or else against the urethra giving rise to difficult micturition. Congestion of the endometrium results from the mechanical occlusion of the veins

draining the uterus. This produces congestion and as a result there is a hyperactivity of the uterine glands as an adaptative function. Thus leukorrhea is also an associated symptom. This discharge is non-irritating in character and is of a whitish-yellow color.

Excessive menstruation is often noted, due to congestion and hypertrophy of the mucous membrane. Dysmenorrhea is uncommon in retro-displacement and the pains which are associated with it are of the congestive rather than the occlusion type. Sterility and abortion are sometimes classed with the symptoms of retro-displacement, although they do not necessarily follow this condition. If the uterus becomes adherent to the surrounding structures, it is not capable of distending to a sufficient degree to accommodate the fetus and abortion results. Then, too, the congestion of the mucous membrane often makes it unfit for the accommodation of the impregnated ovum. Further, when the uterus is retro-displaced, the cervix is thrown forward so that it is not bathed in the seminal fluid as in the normal condition. In fact, the cul-de-sac is entirely obliterated and it is difficult for the spermatazoa to find its way into the cervical canal.

Headache, which is peculiar to all pelvic disorders, is a constant symptom here. Constipation, indigestion, nausea and vomiting are characteristic and, as the result of these symptoms, the individual becomes thin and anemic from malnutrition.

Neurasthenia is a constant symptom and distinctive of retro-displacement. Peculiar sensory disturbances are manifest in the form of lassitude or perhaps in the form of dull, aching pains in the back pelvis and thighs.

Prognosis—The prognosis of retro-displacement, under adjustments, is favorable. It is not in itself dangerous to life except as it produces general constitutional symptoms resulting in general debility and loss of strength.

Inversions

Definition—An inversion of the uterus is an incoordination wherein the fundus has descended and the uterus is either completely or partially turned inside out. In the former condition the fundus is depressed to such a degree that it protrudes from the cervix, while in the latter there is merely a depression of the fundus which does not project through the cervix.

Etiology—Subluxation at P. P. Although the condition is a rare one, it is more apt to occur in parous than in nulliparous women and immediately following childbirth, rather than at a later period. Inversions begin by the fundus becoming depressed, due to a relaxation of the muscle fibers of this region. This relaxation is the direct result of impingement upon motor nerves in the lumbar region, and a consequent deficiency in the muscle fibers of the fundus. When this condition prevails any associated condition which tends to start the depression has a very deleterious effect.

The presence of a tumor in the muscle fibers of the fundus is most often associated with inversion in the nonpuerperal state. These tumors may be either of the interstitial or the polypoid variety. The weight of the tumor together with the lack of muscular tonicity in the wall serves to start the depression and thereafter the normal activity of the uterus in tending to expel any foreign matter is an important factor. By this activity the uterus contracts and in the attempt to expel the tumor (which acts as a foreign body) it drags downward on its attachment until it ultimately produces a partial or a complete inversion. It is not always, however, that a tumor is present and occasionally cases are met with which result merely from a loss of tonicity in the muscle fibers.

In cases existing following delivery the cause also lies in the subluxations of the spine, which produce pressure upon the motor nerves and thus a lack of tonicity in the muscle

fibers of the fundus. While this is the cause, other abnormalities in the pelvic organs, also produced by subluxations, play an important part in the causative factors. For example: malpositions of the foetus which serve to entangle and shorten the cord, produce traction which assists in pulling the fundus downward. Also if the placenta becomes adherent, due to inflammatory alterations, the traction which is necessary to detach it is so severe that, with the already weakened condition of the wall, the depression is begun. If labor occurs rapidly, and the tissue of the vagina and external organs are not given time to properly relax, the strain may be so severe that fundal depression occurs.

Occasionally the condition is so slight that a slight depression of the fundus is the only abnormality. When this occurs the position of the appendages and the other pelvic viscera is not interfered with. However, when the depression becomes very marked, traction is produced upon the ovarian ligaments, and the ovaries and tubes become displaced. Also there is a general alteration in the position of all the pelvic and perhaps some of the abdominal viscera.

Cases of complete prolapse are very rare and some authorities deny the possibility of this occurring. However, there seem to have been authentic cases reported, which proves their existence at least in a few instances. If the fundus does not assume a position lower than the cervix, it is known as an incomplete inversion. However, if the body begins to dilate the cervix and force its way through it is known as complete. When the condition finally shows the uterus turned completely inside out, the organ lies in and completely fills the vaginal canal, and it is then possible for the weight to drag on the vaginal walls until the vagina is also completely or in part inverted. Of course, at this time there is a general alteration of the position of all the pelvic viscera.

In acute cases, the depression in the fundus contains the round ligaments, the fallopian tubes, and perhaps the ovaries,

or a fold of the intestine. This is not, however, true of the chronic cases wherein adhesions usually occur, thus obliterating the funnel shaped depression at the superior.

In acute cases the mass which hangs down into the vagina is soft and very vascular, while in the chronic form much of the vascularity is lost and the body becomes hard and compact. In the chronic form also the mucous membrane lining the uterus undergoes changes, by becoming hard and dry, with very few glands, and is very apt to possess ulcerations on that part of the surface which is most subject to friction. Especially is this true when the inversion is sufficient to allow the uterus to hang between the thighs, where it is continually subject to the contact of the epidermis of the thighs in walking.

In the above we have discussed several conditions which serve as factors in bringing about inversions, but it should be remembered that all of these conditions are abnormal and are in themselves the result of impinged nerves leading to the organs of the pelvis. Further, it is very doubtful if these in themselves would be sufficient to produce inversions, as many women suffer from them, but still the uterus remains in the normal position. It is probably essential that there shall be an impingement on the motor nerves leading to the muscle fibers of the fundus, in order that its resistance may be weakened and it be rendered susceptible to the other abnormal conditions. In brief, whether the one condition or the other is considered as primary, our reasoning ultimately leads us back to the subluxation as the original causative factor, and by the correction of that subluxation we permit the normal transmission of nerve impulses, and the ultimate return to the normal position.

Symptoms—The symptoms may be grouped into the acute and the chronic forms.

If the disease is acute and has developed from lacerations having taken place in the cervix during labor, the symptoms develop rapidly. If, on the other hand, the conditions occur

in these cases which have developed tumors in the fundus, or spontaneously without any apparent change in the adjacent organs, then the symptoms develop slowly.

In the acute forms the initial symptoms are those of extremely severe pelvic pains centered in the uterus and radiating from here throughout the entire pelvis and even down into the thighs. Hemorrhage occurs, not necessarily as a symptom of the inversion but associated with the severe cervical laceration resulting in puerperal cases. The symptoms of shock are also characteristic, not from the inversion itself so much as from profuse loss of blood. This form merges into the chronic form so that the symptoms of the latter become later symptoms in puerperal cases.

In chronic inversion hemorrhage is more or less a constant symptom, although not profuse in character. This because mechanical obstruction is offered by the veins draining the uterus, due to the extreme malposition assumed by this organ. Although the hemorrhage is continuous it is more pronounced at some times than at others, and particularly is this true at the menstrual period. For the same reason leukorrhea is a constant symptom and is the result of the excessive bathing of the glandular cells by serum which escapes from the congested capillary system. Lumbo-sacral pains are common and sensations of dragging and bearing down in the pelvis are also associated. Pressure upon the rectum or the bladder serves to partly occlude these cavities and decrease their capacity. In the case of the bladder, this gives rise to frequent urination, while if the pressure is produced upon the rectum constipation and hemorrhoids result. Anemia results from the continuous loss of blood and is usually found in inversions. Associated with this there is the characteristic neurasthenia which accompanies this change.

The disease most often confused with inverted uterus is that of uterine polypi. The following points of distinction should be kept in mind: With the inverted uterus the enlarge-

ment is pear-shaped and symmetrical, varying little in size from the normal size of the uterus. On the other hand, uterine polypi are irregular in shape. Further, the inverted uterus shows an enlargement, a deep red in color, a soft consistency and bleeds easily upon contact, while the polypi are lighter in color, harder in consistency and do not bleed so readily. The presence of the openings of the oviducts is discernible in the inverted uterus while absent in the polypi. Also upon abdominal palpation, the body of the uterus can be palpated where polypi exists, but this cannot be done in cases of inversion. Inspection shows also that a uterine sound may be introduced through the cervical canal if polypi are present, while this cannot be done in cases of inversion.

It should always be kept in mind that the two conditions may exist at one and the same time, but if so it is seldom that the inversion is complete.

Prognosis—Where the inversion is complete, and more especially where it is acute following the lesions of labor, the prognosis is favorable providing cicatrices have not been formed and the torn surfaces are still subject to cohesion. If the condition is a chronic one, due either to the presence of a tumor in the fundus or to a spontaneous loss of tonicity in this part of the uterine wall, the prognosis is favorable, with the time element always considered.

Fibromata

Definition—This is an incoordination of the uterus, characterized by an overgrowth of the tissues of that organ, benign in character.

In General—These tumors are the most common form of neoplasm found in the uterus and are more apt to occur during the menstrual life of the woman, although cases are on record which have occurred preceding puberty and in women who have passed the menopause. Further, it is more com-

monly found in sterile women and in virgins than in those who have borne children.

Found in all parts of the uterus they occur most often above the cervix. These tumors arise from the middle coat of the uterus and are formed of muscular and connective tissue. Depending on the relative preponderance of these tissues they are classified as: fibroma, myoma, fibromyoma and myofibroma. Of these, the fibroma is the most common, while the myoma is the least common. The fibroma is that tumor which is composed entirely of fibrous tissues; the myoma is composed entirely of muscular tissue; the myofibroma contains a mixture of both, but with a preponderance of fibrous tissue; the fibromyoma contains both, but possesses a greater number of muscular fibers. In character, the myoma is soft and pliable to the touch while the fibroma is hard and resisting. Very little difference is noted in the color, although the myoma in general shows somewhat of a deeper red tint.

Varying in size from microscopic structure to as much as one hundred and fifty pounds, these tumors are usually multiple, although they may occur singly. Each tumor is surrounded as a rule by a capsule of connective tissue, from which it is readily shelled out. Being benign in character, these tumors grow slowly and often many years are occupied in attaining their maximum size. The rapidity of growth where the tumors are multiple is not the same, and as a consequence, even though their development begins at the same time, they vary largely in size. The growth is also intermittent in character, sometimes occurring very rapidly and then remaining in a dormant state for a long period of time. A fibroid tumor which has been in the dormant state and suddenly begins to grow rapidly is usually indicative of cystic degeneration or of pregnancy. This class of tumors is divided into four groups, dependent upon the location. The interstitial or intramural type is that which is found developing in the middle of the muscular coat and projecting partly toward

the uterine cavity and partly toward the external. The sub-peritoneal, otherwise known as the sub-serous type, is found developing from the middle coat but growing toward the external and displacing the peritoneum in its development. The sub-mucous type, as the name indicates, is one developed from the middle coat, growing toward the lumen of the organ and pushing the mucous membrane aside as it develops. The intra-ligamentous type also is developed from the middle coat and grows toward the external, but it is so located that it does not push aside the peritoneum during its development, but rather extends into or between the layers of the supporting ligaments.

Interstitial Fibroids—This class of tumors develops in the middle coat and is often associated with a general overgrowth of the muscular tissue. Because they are multiple and of variable size, they increase the dimensions of the uterus in all directions but produce irregularities on both its inner and its outer surfaces; they are of variable sizes, dependent upon the degree of development which has taken place in them. Each tumor is circumscribed and surrounded by a capsule of fibrous tissue from which the tissue is easily removed providing adhesions have not formed. Although usually hard and of the fibrous variety, these tumors may be soft and composed of muscular tissue. In the latter case they are not as a rule surrounded by a fibrous sheath.

Subperitoneal Fibroids—Usually multiple, these tumors are of variable size and distributed over the entire outer surface of the uterus. They develop to a much greater size than those of the interstitial variety, sometimes attaining a weight of as much as fifty pounds. Although they begin as sessile growths, they ultimately become pedunculated and entirely covered over by folds of the peritoneum. These pedicles are of variable lengths and diameters and thus attach the growth to the uterus so that little movement is possible or if especially long and narrow they allow for marked alterations in position.

Sometimes the pedicle becomes constricted or twisted, due to pressure from external organs and eventually the tumor may become completely separated from the uterus. If this condition occurs adhesions are formed with the surrounding structures and a new blood and nerve supply is derived or else the tumor undergoes degenerative changes and is ultimately absorbed. While undergoing these degenerative changes, however, the tumor is unattached and because of its constant change of position it becomes known as a migrating tumor. Providing the new attachment by adhesion is made with the intestine or with the omentum, it is freely movable, but if it becomes attached to one of the more solid structures of the pelvis it remains as an immovable tumor. No other class of uterine tumors is so apt to become adherent as the subperitoneal fibroid and this because of its close proximity to the peritoneum, which, being a very vascular structure, is subject to congestive inflammation and local adhesions.

Submucous Fibroids—Although, as a rule, these tumors occur singly, cases are on record where they have been multiple. Beginning as a sessile growth, projecting into the uterine cavity they push further and further into the cavity and ultimately become pedunculated. This pedicle varies in length and thickness, allowing for a greater or less degree of movability. This particular type of fibroid tumor is known as fibroid polypi. Usually found beginning during the menstrual life, they originate from the body or from the cervix and the symptoms which they produce are largely dependent upon their location. Soft to the touch, these tumors are composed largely of muscle tissue which is very vascular and attain a size equal to that of a large orange.

Occasionally these polypi have the pedicle by which they are attached broken, due to unusual twisting or tension resulting from uterine contractions or malpositions. When this occurs, the mass begins to slough and may be cast off, usually in broken up masses. Ulcerations are apt to occur on the sur-

face of these tumors whether they are detached or not and this ulcerative degeneration decreases their size. This tumor is more apt to produce uterine contractions and ultimate inversion than any other form of fibroid.

Intraligamentous Fibroids—Distinction should be made between this form of tumor and the subperitoneal type. In the subperitoneal type the tumors occur on the outside of the uterus as do those of the intraligamentous type. However, in the former they are so situated that they force the peritoneum aside during the course of their expansion and it is from this fact that they derive their name. The intraligamentous type, on the other hand, develops either on the anterior or posterior surface of the cervix or in some events on the sides of the body and in this way the tumor involves either the anterior or the posterior ligaments or the broad ligaments at the sides.

The symptoms occurring from intraligamentous fibroids are very pronounced, especially the symptom of pain. If occurring on the anterior of the cervix, the growth extends forward and upward and carries the anterior uterine ligament toward the superior. Lateral intraligamentous fibroids extend outward between the layers of the broad ligament, thus displacing the ovary, the fallopian tube and in fact all of the pelvic viscera on that side.

Uterine Alterations—A general overgrowth of the muscular wall of the uterus usually occurs in fibroma; the degree of enlargement, however, depends upon the situation of the tumor and the variety which is present. Naturally, if the fibroid is of the submucous or the intramural types the enlargement is more marked while in the intraligamentous or subperitoneal types the growth merely pushes aside adjacent organs in its development. Occasionally this hypertrophy is very extensive and the enlargement progresses to such a degree that the uterus itself attains a very excessive weight and extends into the abdominal cavity, pushing aside the

organs here as well as in the pelvic cavity. The uterine canal itself becomes enlarged during the general hypertrophy, but it is only in those cases where sub-mucous fibroids develop that this enlargement becomes proportionately greater than in the other types. Here it is due to the fact that the tumor pushes out the mucous lining and must be accommodated in the uterine canal. Retro-displacement and prolapse of the uterus is a result of its increased size.

Alterations in Other Organs—During the course of their development tumors are very apt to produce congestive inflammation in those organs with which they come in contact. This change is productive of adhesions which bind the adjacent organs to the surface of the tumor and as it continues to enlarge these organs are naturally carried away from their normal positions. Probably the oviducts are more often involved than any of the other surrounding organs and the inflammation which is produced in them by the constant friction of the tumor may give rise to complete or partial occlusion. The occlusions are apt to produce cystic tumors of the tubes known as hydrosalpinx; haematosalpinx or pyosalpinx, dependent upon the substance which they contain.

The ovaries become enlarged, due to congestive inflammation. Their capsules become adherent to the tumor and general hypertrophy and displacement of the ovary results from the continuous pressure. As the tissues of the uterus increase in quantity, the blood supply also increases and the veins and arteries become markedly enlarged. Also the ligaments supporting the uterus undergo hypertrophic changes as an adaptive feature to support the increased weight.

Adhesions with the peritoneum, over the tumor, are very common and usually very extensive. Sometimes these adhesions progress to such a degree that there is a general matting together of all the adjacent pelvic organs and a post-mortem examination shows them practically indistinguishable. The inflammation which results from the friction of the

tumor upon the peritoneum may be localized or it may become general and thus a general peritonitis result.

Pressure of the tumor upon the bladder, the ureters or the urethra, may give rise to many and varied symptoms. If upon the ureters it dams the urine back into the pelvis and may be productive of a general uremia. Hydronephrosis and pyelitis are also apt to occur as a consequence of this pressure. If it occurs upon the bladder, frequent micturition is the result; if upon the urethra, dysuria is the natural consequence. If the tumor is on the posterior surface of the cervix or of the body it produces direct pressure upon the rectum and gives rise to constipation and hemorrhoids. If it occurs upon the fundus of the uterus, the extension is toward the superior and pressure is very part to occur on the coils of the small intestine which are found in this location. This pressure upon the small intestines may produce severe gastro-intestinal symptoms which ultimately result in general emaciation and debility.

Atrophic changes which occur following the menopause and involve the body of the uterus together with all the other tissues of the generative tract very often occur in the tumors at this time. When this change manifests itself, the tumor becomes smaller and harder, possibly remaining for an indefinite length of time or perhaps disappearing entirely.

Cases have been known where tumors of the uterus have entirely disappeared following a pregnancy due to involution which occurs in them to a greater extent than in the balance of the uterus.

Lime salts are sometimes deposited in the tumor after the period of the menopause and, as a consequence, calcification results. This is not an uncommon secondary change and may involve either the tumor alone, the capsule alone, or both. When the substance of the tumor is thus calcified by the deposition of lime salts, the resulting mass is commonly known as a womb-stone.

Fatty degeneration sometimes occurs as a secondary change and cystic cavities are thereby formed in the body of the tumor. Either the entire structure may be so affected or only a portion thereof. This form of degeneration very seldom occurs but when it does it usually results in the entire disappearance of a tumor.

One of the most common secondary changes is that of **inflammation**, which is dangerous in that it may produce general peritonitis or septicemia. Occasionally these inflammatory changes result from adhesions with the intestines, the rectum or the bladder, whereby the toxins from these organs are transmitted by way of the serous canals into the tumor. Inflammatory changes are more apt to occur in fibroid polypi than in other forms of uterine tumors, due to the fact that the polypi are more subject to friction and the mucous membrane is thus more apt to become congested and ulcerated.

Oedematous degeneration may result from inflammation or from an obstruction of the veins draining the uterus and the tumor. In these events there is an infiltration of fluid into the wall of the uterus, between the connective tissue fibers or the muscle fibers of the tumor, thus producing a great degree of enlargement. However, with this enlargement there is a general softening due to the additional serum which dilates the spaces between the fibers and gives rise to what is commonly known as pseudo-cystic degeneration.

Necrobiosis is a form of degeneration which infrequently occurs in fibromata of the uterus. In this form of degeneration there is death of tissue without any resulting damage to the surrounding healthy tissue. In other words, the pedicle by which the nerves gain entrance to the tumor becomes constricted to such a degree that the nerve fibers are completely severed and there is then no vital force reaching the tumor. As a result the cells begin to disintegrate but the product of disintegration is absorbed as rapidly as it is formed and no associated inflammation occurs. If, however, disintegration

takes place so rapidly that the products cannot be absorbed, then they offer themselves as toxins to the adjacent tissues which rapidly become infected and undergo inflammatory degeneration.

Cystic Degeneration is a common secondary change and occurs very largely in lymphangiectatic tumors. In this event the lymph spaces become greatly distended and form large cavities throughout the entire growth. The fluid which is contained is clear, but when it is exposed to the external air it coagulates. Of all forms of cystic degeneration that occurring in lymphangiectatic tumors is the most common. Colloid degeneration or myxomatous degeneration very often result in the formation of cysts in a fibroid tumor. The spaces are here also formed which contains mucous or colloid material but they are not lined with endothelial cells as they are in the lymphangiectatic tumors. Cysts may also be formed in the fibroids by the dilatation of the blood vessels here, and in this event are filled with a dark colored substance. Adhesions occasionally form to occlude these cysts after they have been produced, in which event the solid substances of the blood may be deposited on the wall of the cyst and the fluid remains as a clear, straw-colored substance.

Occasionally cases are found where the fibroid tumor becomes malignant and partakes of the character of sarcomata. At the time this occurs, the tumor is not in reality a benign growth and thus the change should not be classified as a secondary degeneration of the fibromata.

Etiology—K. P. and P. P. In the development of these tumors we have the involvement of the nerves of expansion, emitting from the lumbar vertebrae which supply the body and cervix of the uterus. By this impingement there is produced an excessive quantity of expansion impulses which result in the overgrowth of the muscular and connective tissue fibers throughout either the entire wall or in a localized area. In cases where degenerative changes occur there is also in-

volvement of nutritive nerve fibers and reparatory fibers which often produces ulcerative degeneration. Medical authorities are frank to admit that they know nothing of the cause of fibroid tumors, but the Chiropractic foundation of nerve impingement is all that is necessary to answer this important question. Cases on record are many where tumors of the uterus have completely disappeared under Chiropractic adjustments alone. The disappearance may be accomplished in one of two ways: Either the tumor becomes soft and undergoes secondary changes, which ultimately results in its disappearance, or, if a fibroid polypus, it may be forcibly expelled by uterine contraction, which completely severs the pedicle by which it is attached.

Symptoms—Hemorrhage either into the uterine cavity or into the peritoneal cavity is one of the earliest and most constant symptoms. Particularly is this symptom noted in the form of metrorrhagia and menorrhagia and more especially in the latter form. The duration of the bleeding is indefinite and, as a rule, it is an intermittent symptom, although increased by muscular exertion, intercourse or straining.

The symptom of bleeding is usually eliminated after the menopause, particularly if the tumor undergoes atrophic secondary alteration at that time. If bleeding occurs after the menopause it is usually in cases of fibroid polypi where ulcerations have taken place. Although the blood expelled is usually of bright red color and fluid in consistency it may become dark and clotted if the patient remains in the recumbent position for a considerable length of time.

The submucous fibroid is more often concerned in the production of hemorrhage than any other form of benign tumor. This for the reason that its location makes it subject to friction of the surrounding walls and thus congestive inflammation is produced. Tumors of the intramural type and those of the subperitoneal and intraligamentous types are not so apt to produce hemorrhagic symptoms and if they do, these

are in the form of excessive bleeding at the menstrual period rather than the effusion of blood between those occasions. Then, too, tumors of these three types are so situated that a slight effusion of blood from their structure is absorbed by the fluid systems of the body, and thus while hemorrhage actually occurs, it is not apparent as a symptom. Bleeding is more apt to occur in fibroids formed of muscle tissue and in those which have undergone oedematous changes than in the harder forms of tumors.

For the reason that hemorrhage is a more or less constant symptom in fibromata, so also is leukorrhea one of the most frequent symptoms found. It is from the fact that the capillaries and veins become dilated and congested and ultimately rupture the vessel walls, that hemorrhage results. If the capillaries are congested to a marked degree, then there is a constant effusion of blood from them into the surrounding tissues and the secretive cells of the uterus are profusely bathed in this fluid. This fact, together with the presence of subluxations which produce excessive secretory impulses is responsible for the excessive formation of uterine secretion. The discharge is ordinarily serous in character and of a clear, straw colored consistency, but later it may become mucous or muco-purulent, particularly if polypi are present which are undergoing ulcerative changes. Occasionally also the excretion from the uterus is mixed with blood in small quantities.

Pain in the subperitoneal or in the intraligamentous types of fibroids is not a common symptom in the early stages; in the latter stages, however, it may result from the rapid extension of the tumor and the ultimate pressure produced upon the surrounding organs resulting in their displacement. Then, too, it may be due to secondary changes taking place and if, in cases of fibromata, these pains begin suddenly after the tumor has existed for a considerable length of time, it is usually indicative of secondary degeneration. The pain which is present in the interstitial and submucous types of fibroid usually oc-

curs somewhat earlier than in the other two types, due to the fact that in the latter they produce traction on the uterine wall and in the case of the polypoid growths contraction pains are common. Here, also, secondary changes in the tumor are a frequent cause of pain.

Finally it may be said that the pain is greater during the menstrual periods than at any other time, due to the congestion and the consequent greater displacement which is present during these periods. Peritonitis, either local or general, is also a common cause of pain and the adhesions which result from congestive inflammation may also be classed as causative factors. Added to the pain which is centralized in the growth itself, there is also the unpleasant sensation of bearing down throughout the entire pelvis and aching in the lumbo-sacral region.

Hydronephrosis results from pressure upon the ureters and occurs in fibromata of the subperitoneal type. Suppurative pyelitis also is apt to occur in this type of tumor when it is situated so that it carries its mass upward and forward against the drainage tubes of the kidneys. Symptoms due to involvement of the bladder are also common, particularly in the subperitoneal or the intraligamentous types, and where the tumor is located on the anterior of either the cervix or the uterus, thus producing cystic pressure. This pressure decreases the capacity of the bladder to such a degree that there is a constant desire for micturition. Sometimes the tumor presses on the lower part of the bladder or upon the urethra, thus serving to occlude the urethra or to displace it to such a degree that obstruction results. Occasionally the obstruction is so marked that it is impossible to introduce a catheter, in which event severe pain is experienced and finally the symptoms of uremia may result if the pressure cannot be relieved.

If the growth is on the posterior wall, pressure is apt to occur upon the rectum, thus partly occluding that tube and resulting in constipation and hemorrhoids. The reason that

hemorrhoids occur where obstructive constipation exists is because there is constant straining to produce the act of defecation and thus the congestion of blood in the lower rectum; also there is pressure produced upon the veins draining this area which in time dilates all the blood vessels below the point of obstruction. If adhesions occur between the tumor and the wall of the rectum, and if inflammation finally supervenes, there is apt to occur the absorption of toxins from the fecal material into the blood stream and a general toxemia result.

In general the patient becomes weak and emaciated from the constant loss of blood, the excessive leukorrhea, the continuous pain and the interference in the function of the adjacent organs upon which pressure is produced. Secondary degeneration in the tumor itself also has a deleterious effect upon the general health and in severe cases, a marked anemia finally supervenes. As a rule, where constipation exists the copremia which results still further impairs the health of the patient. Occasionally oedema of the legs is marked, due to mechanical pressure upon the veins draining the lower extremities and if the tumor is of sufficient size to extend into the abdominal cavity, this may progress to an ascites. In rare cases the pressure of these tumors involves the motor nerves supplying the muscles of the lower extremities and involves them in paralysis.

Prognosis—Medical statistics show that death occurs in thirty-three per cent of cases where fibromata are present in the uterus and in many cases chronic invalidism is present in those cases which survive. While this percentage shows that the death rate is comparatively high and that the disease is a serious one, it should also be remembered that many cases are on record which have been burdened with fibromata for many years and in which no ill effects which would prove dangerous have occurred. The Chiropractic prognosis in cases where secondary changes have not taken place, is more favorable than in those where they have occurred. This for

the reason that in the former cases the general health of the individual is impaired less and there is more vitality upon which to draw in the reconstruction process. This does not, however, mean that if secondary changes have occurred, the prognosis is unfavorable, but merely that the time consumed in eliminating the condition will be longer. Under adjustments the tumor gradually softens and then decreases in size until its ultimate disappearance. Occasionally, under adjustments, the normal tonicity is restored to the muscle fibers of the uterus so that if the tumor is a polypoid growth the uterine contractions serve to separate the pedicle forming its attachment, and expel the growth to the external without its having undergone alterations.

Cancer of the Body of the Uterus

Definition—A carcinomatous tumor involving the body of the uterus and malignant in character.

In General—As compared with cancer of the cervix, this is a rare condition although it is often secondary to cervical cancer. When it is a primary affection it occurs usually between the ages of fifty and sixty or immediately following the menopause, while cancer of the cervix is one which occurs usually during the child-bearing period of a woman's life. This disease is apt to occur in women who have borne children or in those who are sterile. Traumatic conditions of the cervix are not a predisposing factor except as they are productive of cervical cancer from which this disease is often an extension.

Usually in the form of an adeno-carcinoma, the disease may be either circumscribed or diffuse over the entire endometrium. In either event the tumor begins in the form of small papillary growths, which, upon increasing in size, take on the character of a fungus with either a sessile base or attached by a pedicle to the wall of the uterus. In the case of

the latter, the new formation takes on the character of a polypus. Ultimately the entire surface of the mucous membrane is involved, or if of the polypoid variety, it dilates the cavity of the uterus and forces the wall outward. Eventually secondary changes begin to occur and the tumor breaks down from ulcerations which leave a raw, crater-like cavity. No matter which of the two growths is present, the enlargements are soft and very vascular, bleeding easily upon pressure. Occasionally when there is an excessive amount of connective tissue, the characteristic features of a malignant growth are absent and the tumor is hard and resistive to the touch. Eventually, however, the secondary changes of carcinoma occur. This growth is not encapsulated and the infiltration which occurs extends into the underlying tissues, ultimately projecting through on the outer surface and forcing upward the peritoneum. These little projections which appear on the outer surface of the uterus are soft in consistency and yellowish-white in color. The progress of this form of tumor is slow compared with carcinomatous affections of the cervix or other organs. Secondary growths in the body of the uterus as the result of metastasis are uncommon, although those which result from continuity are not rare.

Secondary growths occurring as the result of primary affection of the cervix is not an uncommon consequence; metastasis is more apt to occur as the result of uterine carcinoma than when the cervix is involved. When the secondary growths do result in remote organs, they are usually found in the pleura, the liver or the lungs. It is possible also for metastatic nodules to occur in other organs of the body, more particularly the peritoneum or the omentum and in the lymphatic glands throughout the entire body. Secondary involvement of the lymphatic glands, however, is one of the more uncommon results of metastasis and occurs particularly in the later stages of the disease. Care should be taken not to confuse enlargement of the lymphatic glands from overgrowth

of connective tissue with a true secondary tumor. The lymphatic glands particularly, which are located near to the seat of the affection may become involved in an overgrowth of connective tissue and at the same time contain no secondary nodules. Extension by continuity may occur with any of the surrounding organs, particularly if adhesions occur with these structures. Thus, we may have involved the rectum, the bladder, the intestines, the peritoneum, the cervix or the vagina, or in fact any of the organs with which the enlarged walls of the uterus may come in contact.

Etiology—Subluxations at K. P. and at P. P. This disease is the result of impingement on several forms of nerve fibers. Expansion fibers are involved either directly or indirectly in such a way that they transmit an excessive number of expansion impulses. There is also an involvement of calorific and reparatory fibers so that there is an excess of the former and a lack of the latter. All this gives rise to what is known as an NCR condition. The location and the type of cancer depends upon the number of nerve fibers impinged and upon the tissues which they supply with mental impulses. If there are many fibers involved the cancer is very apt to be diffuse and to involve the entire wall of the uterus. If, on the other hand, the number involved is small, the growth will be circumscribed and confined in its activity to a small area.

Symptoms—One of the earliest symptoms is that of hemorrhage which is noted by the patient as a slight discoloration of the linen following intercourse, straining, walking or any other form of exertion. There is an increase in the quantity of the menstrual flow, thus producing menorrhagia and later metrorrhagia occurs. Metrorrhagia increases as the disease advances until, finally, there is a continuous flow of blood to the external through the vaginal canal. Although hemorrhage is usually an early and a more or less constant symptom, cases are known which show nothing except an increase in the menstrual flow. In cases which have passed the menopause,

it is possible that hemorrhage does not occur at all during the course of the disease.

Also one of the early symptoms is that of leukorrhea which results from the general congestion which accompanies carcinoma. Here the blood vessels are all dilated to such a degree that they allow for effusion of serum into the structures which they supply and the result is an excessive secretion of the epithelial cells of the uterus. Primarily this leukorrhea is simple in form, containing in the beginning small quantities of blood. Although watery, thin and profuse, in the beginning, it possesses a disagreeable odor and acts more or less as an irritant to the external generative organs. Finally the excretion alters in character, becomes still more profuse and muco-purulent or purulent in character. The odor becomes more and more unpleasant and the color changes from that of a clear or even a yellowish color to one of a brown tint, due to the presence in the secretion of disintegrated blood cells. In the later stages the secretions become laden with parts of the cancerous growth which have decomposed and broken away from the tumor.

In the beginning pain is not necessarily present but it usually manifests itself as the disease progresses. Occasionally cases are met with, however, which pass through all the primary and secondary stages without the presence of pain in any marked degree during either stage. When it does occur it develops progressively and does not make itself manifest as acute until there is an involvement of some of the surrounding structures. The pain which is present then is probably due in part to adhesions which are formed with these organs. Occurring in the lumbo-sacral region it may also radiate to the pelvis and the thighs and occasionally over the crest of the ilium. Later, however, the pain becomes more severe and centers in the tumor itself, radiating from here in all directions. It may either be intermittent or chronic, but is usually of the colic or of the lancinating type.

In the later stages the pains become paroxysmal in character and are the result of uterine contractions tending to expel the secretions or disintegrated tissues which have found their way into this cavity. Naturally, this is productive of pain because the uterine wall, either in whole or in part, is involved with degenerative changes and open, crater-like cavities are present. These contractions are the result particularly of occlusion of the cervical canal, due to the fact that particles of the cancerous tissue become lodged here and must be subjected to pressure from the inside in order to displace them. It is seldom that pyometra occurs from any other cause in cancer of the body, although in cancer of the cervix it is a common condition due to involvement of the cervical mucous membrane. Pain is also due to the involvement of the surrounding parts with inflammation, and particularly is this true if the peritoneum becomes so affected.

Although the general health is usually unimpaired during the early stages of the disease, later there occurs the characteristic cancerous cachexia and the general loss of flesh, and debility. This is due to the continued absorption of toxins from the tumor or when the intestinal tract or rectum is involved, to the interference with the general nutritive process. If the growth involves the anterior surface of the uterus, or projects to the anterior to a sufficient degree to produce pressure upon the ureters or the kidneys, pyelitis, hydronephrosis or uremia may occur. The gastro-intestinal symptoms take the form of loss of appetite, nausea and vomiting, with constipation usually present. These gastro-intestinal symptoms result from the general toxic condition of the patient. Often fistulae occur into the bladder, the rectum or any of the surrounding hollow organs. Oedema of the lower extremities or ascites may occur in the later stages of the disease.

Prognosis—The prognosis under adjustments is favorable, providing the case comes under the case of a Chiropractor during the early stages, but if secondary changes have

occurred to a marked degree and there is general emaciation and debility resulting from the toxins absorbed, the patient is possessed of little vitality and the prognosis is unfavorable.

Cancer of the Cervix

Definition—A carcinomatous tumor involving the cervix of the uterus and malignant in character.

In General—This is the most frequent site of cancer and about thirty-three per cent of all primary cancerous cases occur in the cervix. It is very seldom found in sterile women or in virgins and practically all cases affect women who have borne several children. Traumatism occurring during delivery is one of the most common predisposing conditions, although there must, of necessity, be associated subluxations in the lumbar region in order to produce a carcinomatous growth.

Occurring usually between the ages of twenty-five and sixty the condition ordinarily follows immediately after or before the menopause. It seldom occurs in early life, although occasionally cases are met with where the disease develops before the child-bearing period. More common in the lower classes than in those engaged in the higher walks of life; this fact serves to substantiate the contention that lacerations of the cervix and improper care following such a condition at least predisposes to the occurrence of carcinoma.

There are two types of carcinomatous affections involving the cervix, so distinguished from the fact that one begins in the surface cells while the other originates in the cells of the glands. The former is known as the squamous-celled carcinoma while the latter is known as the adeno-carcinoma.

In the squamous-celled variety, which occurs more frequently than the other form, the growth begins by involving the flattened epithelial cells forming the lining of the cervical mucous membrane. At first the tissues of the cervix become hypertrophied and hard, with the mucous membrane pale in

color but smooth. There then develops on the surface of the membrane minute papillae which are very delicate and soft and which bleed easily upon pressure. They ultimately take on the form of a cauliflower enlargement which may remain dormant for a long period of time, but when their growth is begun, it is usually rapid and ultimately the entire cervix is involved. The development occurs to such a degree that it completely fills and sometimes obliterates the vault of the vagina and in this event it is impossible to observe the true tissue of the cervix with the use of the speculum. Having attained a marked degree of enlargement this cauliflower mass of tissue begins to undergo secondary ulcerative changes which finally break down the entire structure and it is sloughed off through the vaginal canal; this leaves exposed a deep and irregular ulcerated surface to take the place of the infra-vaginal cervix. The edges of this crater-like cavity are indurated and frequently masses of gangrenous tissue are found forming its walls. The tissues of the cervix are very sensitive and are easily torn upon any exertion or even in making a very careful local examination. The affection spreads rapidly, particularly involving the vaginal wall and ultimately even to more distant organs. It is not uncommon for infiltration to occur to such a degree that the cervical canal becomes completely occluded, and if so, pyometra results from the damming back of the uterine secretions, which rapidly become mixed with pus.

In the adeno-carcinoma, which is not as common as the squamous-celled type, the origin is usually in the glands of the cervix or in the columnar cells of the lining epithelial tissue. Very insidious in its origin this form of carcinoma is less apt to occur following laceration of the cervix than is the squamous-celled type. It is more apt to begin in the upper part of the cervical canal than in the lower extremity and it is not uncommon for secondary changes to progress to such a degree that the entire supra-vaginal cervix is ulcerated before

the vaginal extremity becomes involved. When the disease begins, however, in the infra-vaginal portion of the cervix, it becomes manifest much more readily.

Adeno-carcinoma develops much more slowly than the squamous-celled type and it is seldom that the tissues are broken down by secondary changes until late in the disease. It is not uncommon for the entire cervix to become involved with the growth and for extension to take place to some of the adjacent organs before there is any evidence of secondary alterations. Before the secondary changes occur, however, the cervix becomes enlarged, hard and irregular and the mucous membrane assumes a lighter color than the normal. After the secondary changes occur, however, there are deep ulcerative crater-like cavities formed on the sites of those ulcerations. Occasionally this form of carcinoma projects into the cervical canal and extends through the external or the internal os, but, as a rule, its growth is toward the external wall of the cervix so that it involves the deep tissues. Pyometra resulting from occlusion of the cervix is a common condition.

In either of the two above forms extension may occur by infiltration or by metastasis. If the extension occurs from the former, there is the involvement of adjacent organs, while if metastasis occurs the affection manifests itself in remote parts of the body. Secondary growths from metastasis are not as common in cancer of the cervix as in cancer of the body, although direct extension into adjacent tissues is just as apt to occur.

Given time, the body of the uterus always becomes involved by infiltration and this involvement occurs earlier in adeno-carcinoma than in squamous-celled carcinoma. The body of the uterus, as it becomes involved through direct extension, becomes congested and this congestion is particularly manifested in the endometrium when occlusion of the cervix occurs and the uterine secretions are thus dammed

back. Resulting from this occlusion pyometra usually develops. There is a general hardening of the body of the uterus together with the other organs which are attacked by the cancer and this eventually destroys the movability of the uterus.

The vagina also is involved through direct extension of the pedicles of the cancer into its walls. This involvement is more apt to occur in the early stages of the squamous-celled type and in the latter stages of the adeno-carcinoma.

The bladder often becomes involved through direct extension and this is more apt to occur in the squamous-celled variety than in the glandular variety. Primarily adhesions are formed through which the infiltration occurs until finally that part of the cystic wall which is adherent contains many prolongations from the cancerous growths; eventually it becomes hard and nodular and when the cervical cancer undergoes secondary ulcerative changes, these changes are manifested in the bladder wall as well. It can readily be seen that this condition gives rise to the formation of fistulae between the bladder and the uterus, the cervix or the vagina. Thus, there is a continual mixture of urine with the decomposed materials resulting from the ulceration and a continuous escape of the urine through the vaginal canal. In the early stages of the bladder involvement the wall becomes hardened and thus loses its distensibility; it is for this reason that the capacity of the bladder is decreased in the early stages of the disease.

During the first stages of the disease involvement of the rectum seldom occurs. In fact, an extension of the cancerous growth in the wall of the rectum is unusual because if the extension is of sufficient degree to involve the rectum it is severe enough that death supervenes before such an occasion arises. When the rectum does become involved it is not due to direct extension from the wall of the uterus but rather to an indirect extension by way of the vaginal wall. When ulceration occurs

through the vaginal and the anterior rectal walls, a fistulous opening is formed which permits the fecal material to make its exit through the vaginal canal. Added, then, to the suppuration from the cancerous growth itself is the feces which becomes mixed with the exudate and the broken down tissue. It is seldom that stricture of the rectum results from secondary cancer here owing to the fact that the development does not progress far enough to produce the stricture, before death supervenes.

The kidneys become involved sometimes with inflammation, due to direct extension from a bladder which has been involved with septic changes; this condition is usually followed by ulcerations in the pelvis of the ureter and sometimes the parenchyma of the kidney itself. In other cases pyelitis or hydronephrosis may result from direct obstruction upon one or both of the ureters. This is usually the case when the obstruction results from pressure of a neoplasm in the broad ligament or from direct involvement of the ureter itself. Occasionally the kidney becomes affected, due to obstruction offered by the congested mucous membrane of the bladder which obliterates or occludes the vesical opening of the ureter to such a degree that escape of the urine is impossible. Occasionally a fistulous opening is formed between the ureters and the vagina or even the uterus, and when this occurs the excretion becomes mixed with urine.

The ligaments of the uterus and the other connective tissues of the pelvis which serve to support the pelvic organs sometimes become involved with secondary cancer due to direct extension either from the uterus wall or from that of the vagina. When this change exists the connective tissues lose their distensibility and their elasticity so that all the pelvic organs become more or less fixed and matted together. The blood vessels and nerves of the pelvis become impinged because of the contraction of these connective tissues and the consequent change in their positions. It is for this reason

that pain and oedema are common symptoms late in the course of the disease.

The lymphatic glands, particularly those located in the peritoneum and in the inguinal regions, become involved either through direct extension or through metastasis late in the course of the disease. It is seldom that the bones of the pelvis become involved. The peritoneum is of such a character that it resists the tendency of the ulceration to form openings in it. Instead, it forms adhesions around the ulcerated cavities and tends to confine the growth within certain limits. It is for this reason that peritonitis is an uncommon complication of the disease.

• **Etiology**—Subluxations at K. P. and at P. P. The only difference in the etiology of cancer of the uterus and cancer of the cervix is that in the former a different set of nerves are impinged than in the latter. It must be remembered that a subluxation is not always a condition which appears suddenly and the results of which are manifested in all tissues at the same time. Appearing slowly, as is often the case, the subluxation produces greater and greater pressure as it assumes more marked proportion. This being true, it is only natural to suppose that the tissues which are involved in the latter part of the disease result from impingements which occur later, while those which are involved early in the disease are supplied by nerve fibers which are impinged in the beginning. Thus it is that the extension of a disease from one organ to another or from certain tissues of one organ to another or from certain tissues of one organ to other tissues of the same organ may be explained. Then, too, it must be considered that the septic fluids which affect the tissues early in the disease are still present in the latter part of the disease and they then come in contact with adjacent tissues. So far as the type of nerves impinged is concerned, they are the same as in cancer of the body, or in fact cancer of any other tissue. The changes which occur in the structure are also the same as in

cancer in other organs but the symptoms vary because the functions of the several organs differ. Many of the structural changes occurring in the latter part of the disease are not the result of the extension of the inflammation to adjacent organs but rather are the adaptative measures which Innate supplies in the attempt to mitigate the symptoms and the pathology as far as possible.

Symptoms—As in cancer of the body, one of the earliest symptoms is that of the appearance of blood following some special form of exertion, such as intercourse, straining or walking. In the beginning the hemorrhage is in small amounts and merely streaks the vaginal discharge. Later it manifests itself as a menorrhagia and ultimately as a metrorrhagia, when the larger vessels are subject to ulcerative changes. This symptom of hemorrhage is particularly noticeable if the cancer occurs after the menopause. In the beginning of the disease, the bleeding is not due to ulcerative changes, but rather to the congestion of blood which occurs in the uterus and the cervix. Then, too, the small papillae which first make their appearance are easily ruptured upon the slightest pressure or friction and this may also be given as a cause of the slight hemorrhages occurring early in the disease. Later, the hemorrhage becomes more and more apparent, due to ulcerative changes, until finally there is a constant and profuse loss of blood, which is mixed with the vaginal secretion. Occasionally during the secondary changes the bleeding may become very profuse even to the point of being dangerous to the life of the patient, providing an ulceration occurs through a large arterial wall; death, however, from this cause is rare.

The same conditions which produce hemorrhage also are factors in the production of leukorrhea. Here there is a congestion of blood in the uterine wall, much of which makes its escape into the surrounding tissue and bathes the secreting cells with fluid. Thus it is that the secretion becomes very profuse and the common condition of leukorrhea obtains.

In the beginning, this discharge is watery in character and very profuse while later, particularly after secondary changes have begun, it becomes muco-purulent and of a very fetid odor. Finally the fluids become mixed with the broken down tissues of the cervix and these substances, together with the pus resulting from the secondary changes, serve to make the leukorrheal discharges very irritating to the membranes with which they come in contact. This substance may be of such a character as to eventually produce ulcerations on the inner surface of the thighs as well as on the labia of the vulva.

In the early stages of the disease pain is not a constant nor a severe symptom. In fact, pain does not exist as a distinctive feature until extension begins to occur from the cervix to the surrounding tissue; then it is that the connective tissues of the pelvis become affected and by their contraction and matting together serve to displace surrounding organs and to press upon the nerve fibers and vessels of the pelvis. Pain is, therefore, a late symptom in the disease and when it does occur is centered in the uterine wall. From here it radiates to all organs of the pelvis and even down to the thighs. In character, the pain is acute and lancinating or of a burning type. This pain may be either constant or intermittent but is extremely severe and ultimately the patient becomes emaciated, and debility supervenes from acute suffering and loss of sleep. Associated with this acute pain there is that of a dull aching character which occurs in the lumbo-sacral region and in rare cases this is the only pain which exists. Colicky pains sometimes result from contraction of the uterus in attempting to expel secretions which have become dammed up in its cavity. Particularly this occurs when obstruction has taken place in the cervical canal and the retained secretions can find no means of exit.

Early in the disease the general health of the patient is unimpaired but later on, due to gastro-intestinal changes, the nutritive process is affected and there is a rapid loss of

strength and emaciation. Uremia may result from obstruction of the ureters and thus kidney affections supervene. These usually take the form of hydronephrosis, pyelitis or nephritis. Gradually there is a loss of appetite with perhaps nausea and vomiting; constipation usually exists, although some cases suffer from chronic diarrhea. Sometimes difficulty is experienced in defecation because of the inflamed condition of the rectum and the pressure which is produced on the pelvic organs while straining. Frequent micturition or painful micturition is not uncommon and is due to the involvement of the lining membrane of the bladder or the urethra with inflammation. In very rare cases the urethra becomes occluded and dysuria results. Peritonitis is uncommon, due to the fact that it forms adhesions around the cancerous tissue and prevents its rupture or ulceration into the peritoneal cavity. The superficial veins of the abdomen may become enlarged and distended, due to their obstruction by direct pressure. For this same reason ascites and oedema of the lower extremities manifest themselves.

Prognosis—Under medical care death supervenes in from one to two years and may be the result of severe hemorrhage, due to ulcerations. However, in the majority of cases death supervenes because of the general septic condition of the body and its inability to properly digest and assimilate the foods. Under adjustments the prognosis is favorable, providing the disease comes under the care of the Chiropractor in its early stages. However, if it occurs after secondary changes have begun the prognosis is not favorable, because of the destruction of tissue centers and because of the general septic condition which so lowers the vitality that there is little to build upon.

Sarcoma of the Uterus

Definition—An incoordination in the wall of the uterus characterized by an overgrowth of tissues of mesoblastic

origin and associated with secondary changes, malignant in character.

In General—It is very seldom that sarcoma of the uterus occurs as a secondary neoplasm. When such a condition does exist, it is the result, as a rule, of direct extension from the ovary. Occasionally the condition of primary sarcoma of the cervix exists but more often the original lesion is in the body of the uterus. It occurs between the ages of twenty-five and fifty, as a rule, although it may exist during any period of life. The sarcomatous growth differs from the carcinomatous in that the latter is rarely found except late in life, while the former is more apt to occur in early life. Pregnancy, when associated with the laceration of the cervix, is considered as a predisposing factor in carcinomata, while it apparently has no bearing upon the sarcoma. In fact, women who have not borne children are more susceptible to sarcoma than those who have.

Parenchymatous Sarcoma of the Uterus—Otherwise known as fibro-sarcoma, circumscribed fibro-sarcoma, or recurrent fibroid, this disease usually begins in the parenchyma or muscular coat of the uterus. Frequently also sarcomata develop in the structure of an otherwise benign fibroid tumor and when this condition obtains the malignant growth spreads rapidly until finally all the tissues of the benign growth are taken into and become a part of the malignant structure. This being true, the sarcomatous tumors may be classified under four subdivisions just as the fibroid tumors are, viz.: the sub-mucous, sub-peritoneal, intraligamentous and interstitial. If of the sub-mucous variety the uterine polypus that is thus formed extends down into the cavity of the uterus, sometimes as far as the internal os and thus occludes the opening of the uterus and causes a retention of its secretions. It is because of this fact that the colicky contraction pains are often felt in this form of sarcoma.

Sarcoma of the Endometrium—Otherwise known as dif-

fuse sarcoma because it involves a wide area and is not circumscribed in its progress, this growth usually begins in the fundus and manifests itself as a soft papillary growth resembling a mulberry in construction. From here it spreads until it may involve the entire mucous membrane. Occasionally this form of sarcoma is round or oval in shape and soft in consistency. Occasionally also it originates in the cervix, where it first makes its appearance as a group of translucent cysts which contain a colorless viscid fluid. This form of sarcoma develops more rapidly than the parenchymatous form and rapidly extends throughout a large part of the uterine wall; for this reason more extensive adhesions are formed in this type than in the parenchymatous type. As it develops rapidly it also undergoes secondary changes rapidly and ulceration occurs early in the disease, thus destroying the parenchyma of the uterus and producing one or more crater-like cavities in the wall.

Both these forms of sarcoma may extend by continuity or by metastasis. If by metastasis the secondary growths appear in the peritoneum, the lungs, the liver or other remote organs. If the secondary growths are the result of direct extension by continuity, the adjacent organs of the pelvis, particularly the supporting ligaments, the vagina and the tubes are most apt to be affected.

Etiology—Subluxations at K. P. and at P. P. In the benign tumors no nerve fibers may be affected except those of expansion, either directly or indirectly. These, by their excessive activity, produce an overgrowth of tissue which otherwise would remain dormant and might exist throughout life without producing any ill effects. In the case, however, of the benign tumors there does exist a hyperactivity of the cells of certain tissues, produced by impingement of nerve fibers at the points of emission from the spinal column. We have here said that an ordinary benign fibroid tumor of the uterus may become the seat of a sarcomatous growth which by spreading

eventually involves all the tissue of the original benign neoplasm. When this condition does exist, it is because the original subluxation existing, which affected the expansion fibers, is increased in degree to such a point that the other fibers through which other functions are controlled, also become involved. In brief, the subluxation increases in severity so that not only the expansion fibers are affected, but also those of nutrition, reparation and of the calorific function. Thus it is that the original benign growth becomes malignant in character. It is also possible that an entirely different subluxation may occur following the original one, and that as a result of this second subluxation more fibers are involved which ultimately produce a sarcoma in the same manner. In cases where the sarcomatous tumor is not preceded by a benign tumor, all these nerve fibers become impinged at approximately the same time, so that instead of the malignant growth being preceded by a benign growth, it originates in the beginning as an independent structure.

Symptoms—The symptoms of sarcoma are separated into two groups dependent upon the type of growth which exists.

Sarcoma of the Endometrium—One of the earliest symptoms is that of hemorrhage which shows itself at first merely in the form of a slight straining or streaking of the secretions with blood. This occurs usually following straining or any other form of exertion. Later it is manifested in the form of menorrhagia with slight hemorrhages between the periods and finally as a metrorrhagia which may ultimately become extremely severe. In the latter stages hemorrhage may develop into a very serious symptom due to ulcerations occurring through the large arteries of the tumor. Sometimes death results from extensive loss of blood when this condition obtains.

Leukorrhea is also an early symptom making its appearance at about the same time as the hemorrhage. In the beginning this excessive discharge is clear in color and thin in con-

sistency, but later it develops into a mucous discharge which may become purulent in character and mixed with broken down tissues from the tumor; when this condition exists the odor becomes very offensive and the color changes from a yellow to a dark brownish tint, due to the presence of broken down blood cells. Also upon examination, shreds of the cancerous tissue may be found mixed with the secretion.

Pain is not, as a rule, an important symptom in the early stages, but begins usually as the surrounding tissues become involved or at the time secondary changes make their appearance. It is felt as a dull, aching pain in the lumbo-sacral region and as an acute burning or colicky pain centered in the tumor itself and radiating from here to all the organs of the pelvis and even down to the thighs. The pain may be paroxysmal or it may be continuous. If the pain is colicky in character, it is usually due to the accumulation of broken down sacromatous tissue finding lodgement in the cervix and occluding that passage; when this condition exists the uterus tends by its characteristics to expel the dammed up secretions and it is these contractions, together with the fact that the uterine wall is ulcerated and sensitive, that produce the colicky pains. Involvement of the peritoneum and the development of the symptoms of either localized or general peritonitis is uncommon because of the formation of adhesions which prevent the ulcerations involving surrounding organs or structures.

Parenchymatous Sarcoma—In the majority of cases, this form of sarcoma is preceded by the formation of a fibroid tumor, benign in character, and the symptoms of the fibroid tumor are, therefore, characteristic of the early stages of parenchymatous sarcoma.

Hemorrhage occurs early in the disease and is the result of the endometritis, which is associated with the growth of a fibroid tumor. The blood vessels which are developed are large and tortuous and upon exertion are apt to become ruptured. At first the small vessels only are involved and this

gives rise to small quantities of blood making their appearance between the menstrual periods. Later, however, large vessels are ruptured, and when this occurs there may be severe hemorrhage with a consequent weakness and anemia. Menorrhagia is common because of the marked increase in the number and in the size of the blood vessels throughout the entire uterine wall.

The same factors which are productive of the symptoms of hemorrhage are also vitally concerned in the production of leukorrhea. It is because blood vessels are congested and distended by blood that the serous element finds its way into the surrounding connective and epithelial tissues and finally manifests itself as a secretion thrown into the uterine cavity.

It is difficult to determine the time of intervention of the sarcomatous growth. Usually, however, the sudden appearance of pain and the rapid growth of a tumor, hitherto classed as a fibroid, marks the beginning of a sarcomatous tumor. In the latter stages of the disease, extensive hemorrhage and a profuse and offensive discharge are the characteristic features, although these are not noted unless the sarcoma develops in a sub-mucous or an interstitial fibroid.

Prognosis—In either of the above forms of sarcoma, the prognosis is favorable providing the disease comes under the care of a Chiropractor in its early stages. If, however, adjustments are not given until the secondary changes have occurred to a marked degree then the prognosis is unfavorable. This because of the fact that the centers of development for healthy tissue have been destroyed and further because such great quantities of toxins have been produced that the vitality of the patient has been largely expended in neutralizing those ill effects.

Inflammation of the Uterus

Commonly called metritis, this is a condition involving inflammation of any or all parts of the uterine wall and the

most common form is that involving the mucous membrane which is given the special name of endometritis. If the mucous membrane of the cervical canal is involved, the disease is known as endocervicitis. Of late the terms metritis has come to imply inflammation of the parenchyma of the uterus as distinguished from endometritis which implies involvement of the mucous membrane. It is very seldom that metritis occurs as a primary condition but rather it is secondary to endometritis. Rarely the inflammation begins in adjacent pelvic organs which form adhesions with the uterus and thus the inflammation extends into its parenchyma. When this condition exists, the extension is from the outer covering to the muscular and connective tissue rather than from a lining membrane.

Although endometritis may exist as an independent condition, and although the same is true of endocervicitis, yet these two conditions are usually co-existent. We will first consider the subject of endometritis and later that of endocervicitis, treating them as two distinct diseases, despite the fact that they usually occur at the same time.

Endometritis

This is a condition of inflammation of the endometrium which is divided into five varieties or forms, two of which (congestive endometritis and constitutional endometritis) are classed as simple forms while the latter three are much more dangerous to the patient.

Endometritis is divided into the five following forms:

- Congestive Endometritis.
- Constitutional Endometritis.
- Gonorrheal Endometritis.
- Septic Endometritis.
- Senile Endometritis.

Congestive Endometritis

Definition—This is an incoordination of the endometrium characterized by a sub-acute or chronic inflammation and excessive secretion of the uterine glands.

In General—Depending upon the tissues which are involved this disease is divided into the glandular and the interstitial varieties. As the name implies, the former is a type which involves the glands of the uterus wherein they become enlarged to a marked degree, while in the latter the characteristic feature is an overgrowth of the connective tissues between the glands and a marked increase in the blood supply.

In congestive endometritis there is a general overgrowth of the mucous membrane either in part or as a whole. Because of the irregularities thus produced on the surface of the membrane, providing the inflammation is extensive, this form is called fungoid-endometritis. Occasionally the entire mucous lining gives off a false membrane in the form of shreds which membrane is expelled at the menstrual period and in this particular form the disease is known as exfoliative endometritis. When the disease is of the glandular variety, certain of these glands may become enlarged and project into the cavity of the uterus, thus forming small polypoid growths; this form is known as polypoid endometritis.

The interstitial and the glandular type of congestive endometritis are often found existing at the same time, either involving different parts of the mucosa or the same areas at the same time. In chronic cases which have existed for an extended length of time, the mucous membrane may be entirely replaced by connective tissues, thus becoming hard and dry and not subject to the menstrual periods.

Congestive endometritis is always associated with some other disease affecting either the uterus itself or one or more of the adjacent pelvic organs. The associated diseases are those which have a mechanical effect upon the vessels supply-

ing and draining the uterus so that the blood supply is made abnormal. Under this class of diseases we have all the forms of uterine displacements, particularly those which involve flexion. Tumors of the uterus, either of the benign or malignant types, may have the same general effects of compressing the veins of the uterus and thus damming back the blood into the capillary system of this organ. Sub-involution gives rise to a chronic congestion, because during pregnancy the vessels supplying the uterus are increased in quantity and size to such a degree that they may properly perform their increased function. In sub-involution fatty degeneration fails to occur and the increased number of blood vessels is present despite the fact that the necessity no longer exists. Tumors in adjacent organs serve by their pressure to decrease the size of the veins draining the uterus and this is productive of congestive endometritis. Chronic constipation, wherein there is a continuous pressure upon the pelvic organs from the fecal material lodged in the rectum and lower colon serves to compress the veins and thus to congest the blood in the uterus.

Etiology—Subluxations at P. P. or local. It can readily be seen that congestion and a consequent chronic inflammation of the endometrium is possible without the uterus being directly involved through subluxation. In brief, nerve fibers supplying other organs, particularly those of the pelvis, may be impinged, resulting in disease of those adjacent organs which directly affect the drainage system of the uterus. An example of this is in tumors which, although they may be located in the abdomen, press upon the veins and directly affect the uterine mucous membrane. On the other hand, motor fibres supplying the uterine wall may be impinged, thus producing various forms of versions or flexions and allowing for a mechanical obstruction of the veins before they make their exit from the uterine wall.

Whether, however, the disease is one of the uterus itself or of an adjacent organ the underlying cause of the congestive

endometritis is a subluxation which directly produces an in-coordination by impinging the nerve fibers supplying certain tissues either of the abdomen or the pelvis.

Symptoms—The disease is one which is essentially chronic in character and its beginning is so insidious that the patient may not be aware of its existence for some time after it makes its appearance.

Naturally being associated with other diseases and adaptive to them the condition is one wherein the symptoms are so interwoven with those of the allied condition that it is often impossible to distinguish them.

The outstanding feature of the disease is that of leukorrhea which is due to excessive secretion of the uterine gland. Usually thin and watery in character and of a serous nature it may in some cases become muco-purulent or purulent. Odorless and non-irritating in character, this secretion may become mixed with the degenerated tissues of some associated lesion which causes it to be offensive and may, in some cases, produce vulvar inflammation. If the disease shows a discharge which is thick and tenacious, although non-irritating in character, it implies an involvement of the endocervical mucosa because these glands secrete a fluid much more viscid in character.

The amount of the discharge depends upon the character or type of the inflammation and naturally is more profuse in the fungoid variety where the entire membrane is involved than in those varieties where the inflammation is localized. Also it is more profuse in the glandular variety than in the interstitial type. The pelvic congestion which occurs at or near the menstrual periods serves to produce greater effusion of serum and more excessive glandular secretions at these times than at other periods.

It is very possible that there are no hemorrhagic symptoms either during or between the menstrual periods and this is particularly true if the mucosa is not hypertrophied. When

the inflammation is of the polypoid or fungoid varieties, hemorrhage is more apt to occur than in other types. Also it is associated more frequently with the interstitial variety than with the glandular variety because of the overgrowth of the connective tissue in the former and the marked increase of blood vessels which accompanies this change. Very severe hemorrhages are apt to occur in polypoid endometritis because of the growths being subject to the friction of the uterine wall and because the blood vessels lie extremely near to their surfaces. Painful menstruation is more apt to occur when there is a marked overgrowth of the connective tissue, because at these times the tissues of the cervix are also hypertrophied and tend to occlude the canal.

It is seldom that pain directly results from the congestive endometritis but is more apt to appear as a symptom of the lesion which is, in turn, producing the congestion. It is only at those times when congestion becomes extremely severe that there exist the symptoms of lumbo-sacral and pelvic pains which can be directly traced to the existence of the congestion. Perhaps the most common form is that of a burning sensation centered immediately behind the symphysis pubis. Vertical or occipital headaches are not uncommon in congestive endometritis, usually resulting from the increased weight produced in the uterus.

During this disease the mucous membrane becomes altered, either by an overgrowth of connective tissue or by an extreme congestion of the mucous membrane to such a degree that the uterus no longer offers a suitable wall for the impregnated ovum. As a result of this condition, sterility is very apt to occur, or if the ovum does, temporarily, find attachment it is thrown off, because the membrane is no longer suitable for maintaining it in the normal state of health. Then, too, the change in the ovarian secretions is of such a character that they are destructive to the life of the spermatazoa. In the latter stages of the disease the function of the mucous mem-

brane in offering itself as a suitable bed for the ovum is destroyed as the mucosa at that time becomes replaced by connective tissue fibers.

General depression and debility, with a loss of desire for activity, either mental or physical, is a characteristic feature in cases of long standing. These cases also develop symptoms of neurasthenia and hysteria. Constipation from a displacement often is productive of gastro-intestinal symptoms which have an ill effect upon the general health of the patient. Care must be taken not to confuse the symptoms resulting from the congestion with those which result from the associated condition.

Prognosis—The prognosis is favorable in the majority of cases, but the length of time required in accomplishing the desired results is dependent upon the character of the lesion which produces the congestion. If this lesion is malignant in character and if it has developed to the latter stages of the disease, the prognosis should not be considered as hopeful. On the other hand, if pressure is produced by displacements of the uterus or by benign growths occurring upon other organs of the pelvis, the prognosis for congestion is entirely dependent upon the prognosis of the associated condition and as the latter improves the former must, of necessity, follow the general change.

Constitutional Endometritis

Definition—This is a simple inflammation of the endometrium, chronic in character, which is associated with some constitutional disease.

Etiology—Subluxations at K. P. and P. P. Medical authorities maintain this disease is caused by certain constitutional diseases, such as tuberculosis, chlorosis, anemia, rheumatism, gout, scrofula and lithemia.

The Chiropractor cannot concede that constitutional en-

dometritis is caused by an associated disease because there is nothing in the associated conditions which would be productive of inflammation in the lining of the uterus any more than inflammation in other mucous membranes of the body. The argument that they are causative factors is also unsound from the fact that if they were, then every woman suffering from any of these diseases would also suffer from endometritis and this we know is not true. It will be noted that those diseases which we have specifically mentioned and which are given as associated with endometritis are constitutional diseases, all of which involve subluxations at K. P. This being true and K. P. also being a subluxation, which together with one other region of the spine, is sufficient to produce the disease, it is only logical to assume that these two subluxations co-exist and that K. P. impinges a set of fibers which produces the associated disease at the same time. In other words, these two diseases are associated conditions rather than one of them being caused by the other.

Symptoms—The onset of the disease is gradual and throughout its entire extent it is chronic in character.

Leukorrhea is the earliest symptom and the one which is always present in every case. This discharge is serous and watery in character and its extent depends upon the extent and the severity of the inflammation. Non-irritating in character the secretions given off from the uterus seldom become purulent, due to the fact that fungoid growths seldom, if ever, appear in this form of endometritis, despite the fact that it may be either of the glandular or the interstitial variety. For the same reason the discharge is not mixed with blood, as secondary changes rarely occur. The leukorrhea is more profuse immediately before, during and after the menstrual period and is more extensive in the glandular variety than in the interstitial type. Menstrual disturbances are rare, although occasionally menorrhagia exists as the result of the overgrowth of the mucosa or its congestion. When associated with

rheumatism or gout, the conditions of the serum which exist in these two constitutional disorders is manifest not only in the muscles of the extremities and other educational voluntary muscle fibers but also in those of the Innate voluntary type. This being true, any activity of the muscle fibers in the uterus which occurs particularly at the menstrual periods will give rise to pain just as activity of the educated voluntary fibers in other parts of the body give rise to pain.

Structural changes of the uterus are less apt to occur in constitutional endometritis than in the congestive or other forms and, therefore, the interference with conception is less marked. Because of this fact, sterility and abortion are not common symptoms of constitutional endometritis, but while this disease exists the associated condition may so affect the general health of the patient that she is incapable of properly nourishing the impregnated ovum and consequently sterility or abortion occurs as an intellectual adaptation resulting from the constitutional disorder rather than from endometritis.

The general symptoms occurring in constitutional endometritis are those of general emaciation, neurasthenia, and at times hysteria. Gastro-intestinal symptoms may also be associated with this disease, although care should be taken not to confuse these with the symptoms of the associated constitutional disease. As a rule, the symptoms of the constitutional disease so overshadow those of the endometritis that whatever constitutional symptoms do exist with the latter are indiscernible.

Prognosis—The prognosis of constitutional endometritis is favorable under adjustments and in no way is dependent upon the associated conditions. All that is necessary is to correct the subluxations at K. P. and P. P. when there will be the normal flow of mental impulses from brain cell to the tissues of the uterine mucosa and its normal function will then be restored.

Gonorrheal Endometritis

Definition—An inflammation of the mucous membrane of the uterus and cervix associated with the presence of the gonococcus of Neisser.

In General—The disease may be either a primary or a secondary one but is usually the former. This, for the reason that the head of the penis comes in direct contact with the external os of the cervix, thereby transmitting the toxins from the male to the female and the inflammation follows. It is seldom that the disease is a secondary one because being secondary it must of necessity extend from the vagina and this organ is seldom affected in primary gonorrhea. It is not infrequent for cases to exist where the vulva and the urethra are inflamed, but because of the fact that the secretions of the vagina act as antitoxins the inflammation does not extend to the membrane of this cavity. On those rare occasions when the vagina does become involved with gonorrheal inflammation it may extend to the cervix and to the endometrium and thus the disease will be secondary in these latter organs.

Etiology—Subluxations at K. P. and at P. P. The old idea that gonorrhea is a disease resulting from the action of the gonococcus upon the mucous membranes with which it comes in contact is not admitted by the Chiropractor and in fact has never been substantiated. There is no question but that many cases have come in contact with the gonococcus bacilli and yet have not contracted the disease. It may be true, and experience points to the fact that certain toxins are produced by gonorrheal inflammation which, if brought into contact with the mucous membranes in the generative tract of a second individual, may subject that individual to the disease itself. The explanation for this is that the second individual possesses subluxations at K. P. and at P. P. which generally weaken the tissues of the generative tract, changing their secretions; also that the general elimination of the body

is vitally affected by the subluxation at K. P. and thus the resistance of all mucous membranes is lowered. This being true, the membranes of the generative tract are in a low state of resistance; are, as a matter of fact, already diseased and the action of any toxin, whether that from gonorrhea or from some other disease is very apt to produce inflammatory changes and result in deleterious effects. In brief, the action of the toxin affects the tissues here in very much the same way as trauma affects entirely normal tissue.

Formerly it was supposed that the individual who suffered from gonorrhea would always possess the disease in a latent form, and that in future years it might manifest itself as an active disease. Although it must be admitted that in some cases the disease does reappear after existing in the latent form for long periods of time, yet this does not conclusively prove that all individuals having suffered with gonorrhea are subject to its manifestations in later years. As a matter of fact, many patients who have had the disease either in the acute or chronic forms rid themselves of the symptoms and are thereafter completely free from the disease. It is purely a question of whether the subluxations which are productive of the disease are entirely eliminated or whether they remain as only slight abnormalities, insufficient to produce any noticeable ill effects. If the subluxations, in after years, recur as marked abnormal conditions, after having been present as only slight abnormalities, then the toxins which have been present in slight degree during the intervening time, together with the subluxation produce a recurrence of the disease. If, on the other hand, the subluxations existent during an attack of gonorrhea are entirely eliminated, then the toxins are also completely eliminated from the body and the recurrence of the disease is impossible.

Symptoms—Either acute or chronic, the disease is usually of the latter form.

If of the acute form, it begins by chills followed by a

rise in the bodily temperature and an increase in the pulse rate. Immediately pain manifests itself in the uterus and nausea and vomiting are not uncommon symptoms. In the course of a few hours an exudate appears, mucous in character, which rapidly changes to a purulent variety. Also because of the marked congestion which accompanies the disease, rupture of the tiny blood vessels occurs and the excretion becomes mixed with blood. These symptoms gradually become less severe and within the course of a week the disease merges into the chronic form.

In the chronic form leukorrhea is one of the earliest symptoms noted and is the result of an excessive secretion by the glands of the uterus. This secretion at first is mucous in character and of a yellowish color, but later changes to a greenish color and finally becomes purulent in character. The amount of excreted material, however, in chronic gonorrhea is comparatively small when considered with the acute form. In the chronic form blood is less often found with the excretion, but when this does occur it is usually immediately before or immediately following the menstrual period. Before and after the menstrual periods also the exudate increases in quantity, due to the congestion in the mucous lining and the consequent hyperactivity of the uterine glands.

Dysmenorrhea is not an uncommon symptom and when it does exist it is the result of congestion of the mucous membrane in the cervix, which serves to occlude the opening and prevent the escape of blood to the external. When this condition exists, the fluids are dammed back in the uterus and pain is experienced due to the contractions of the womb in the attempt to expel these fluids.

Vertical or occipital headaches are associated with both the acute and chronic forms and lumbo-sacral pains are not uncommon. General pelvic pains radiating to all parts of the pelvis and even down to the thigh, particularly characterized

by a burning sensation centered in the uterus itself, is distinctive of gonorrheal endometritis.

Particularly in the chronic form sterility and abortion are common. This because of the fact that the mucous membrane being continually congested is incapable of providing a suitable bed for the reception and maintenance of the impregnated ovum. Then, too, the excretions which are continually being given off from the membrane lining the uterus are not conducive to maintaining the vitality of the spermatazoa.

General depression, debility and neurasthenia are common symptoms in the chronic form and often lead to a loss of flesh and emaciation.

The distinctive feature between this form of endometritis and other forms is in the fact that here the disease is much more apt to extend to adjacent organs and involve them in inflammatory changes than the other forms. Because the vagina is seldom affected by inflammation, this extension usually takes place to the tubes which become congested and swollen and give rise to a marked degree of pain. Also this extension may continue so that a local peritonitis results or an ovaritis, in which event the symptoms become correspondingly complicated. Other than the tendency of the inflammation to involve adjacent structures, the symptoms do not differ materially from those of congestive endometritis or of the constitutional form.

Prognosis—The prognosis is favorable and the length of time involved in the correction of the disease is entirely dependent upon the time required to correct the subluxations. The subluxation at K. P. is as important to correct as that in the lumbar region, for the reason that if the kidneys are functioning improperly, there is the continual damming back of poisons and the consequent lowered resistance of all the tissues of the body.

Septic Endometritis

Definition—An incoordination of the endometrium characterized by marked inflammation and the presence of a micro-organism; usually the staphylococcus or perhaps the streptococcus.

In General—This disease is one which, as a rule, follows either labor or abortion and is one which is made active by improper care during these times. The most frequent form is that which immediately follows delivery and it is more common in the lower classes than in those who are enabled to procure the best medical service. Factors which are vitally concerned in inducing the active stage of the disease are improper manipulations during delivery, too frequent use of the forceps, the introduction of the hand into the uterus to detach the placenta, and unnecessary vaginal examinations during labor. The disease is also one which commonly follows abortion and is very often the result of detached parts of the placenta remaining attached to the uterine wall and undergoing degenerative changes here which are transmitted to the wall of the uterus.

Etiology—Subluxations at K. P. and P. P. The use of the uterine sound is a frequent factor together with abnormalities in the uterine wall, of septic endometritis. The use of instruments which have been improperly cleansed before an operation is also an inducing factor in the production of the disease. The degeneration and sloughing of uterine polypi very often produce masses of material which become lodged near the internal os and give rise to inflammatory changes here.

Although these factors are concerned in the production of the disease insofar as they are the direct exciting agents which make an active condition of one which heretofore has been passive, yet they are in no wise to be considered as direct causative agents. The cause of the disease is the improper

supply of mental impulses to the uterine wall and thus the inability of this organ to properly withstand the toxins which come in contact with it. If the mucous membranes lining the uterus and the cervical canal are normal, their fluid serves to neutralize the effect of the toxins and of these latter which do find their way into the wall itself, none are enabled to produce deleterious effects because the function of elimination is normal and they are promptly absorbed by the serous stream and transmitted to the excretory organs where they are eliminated from the body. The kidneys being the principal organs of elimination it is essential that they be properly supplied with mental impulses in order that the general bodily elimination may be kept at the normal.

Symptoms—This disease may be either of the acute or chronic variety, but, as a rule, it partakes somewhat of the character of both. Beginning as an acute form and ultimately merging into the chronic.

Acute Form—The symptoms of this disease usually occur immediately following an abortion or labor wherein toxins have been introduced either directly or indirectly into the generative tract. Any time within the first week there is the appearance of a severe chill, after which there is a marked rise in the temperature and an increase in the pulse rate. Temporarily the discharge is checked but subsequently reappears as a dirty, dark colored excretion. Severe uterine pains occur early in the disease and while at first they are intermittent in character, they ultimately become continuous. There is a decrease in the quantity of the urine which becomes very highly colored. Diarrhea develops. There is a recurrence of the chills with a continued high fever and if the symptoms continue to increase in severity there ultimately develops the typhoid status. The characteristic features of the fever are its continuous elevation, together with remissions which occur following the increases which take place after each chill. Gastro-intestinal symptoms occur and there is a loss of ap-

petite. There is also a severe vomiting and a rapid emaciation and exhaustion. The disease either terminates fatally within a week or it gradually begins to merge into the chronic form.

Chronic Form—Usually preceded by the acute form, this disease does not differ to any marked extent from the constitutional or congestive forms, except that it is preceded by the acute variety.

Leukorrhea is a constant symptom with the discharge very profuse and of a purulent character. Blood is often mixed with the leukorrheal discharge and is the result of a marked congestion in the uterine wall or of the presence here of uterine polypi which are continually subject to friction from the uterine wall. These polypi occasionally ulcerate and produce marked hemorrhages. The odor of the excretion is seldom offensive. It is mixed, as a rule, with the secretions from the vagina and the cervix, being more profuse immediately before, during and after menstruation.

Although the menstrual period is prolonged and the excretion is very profuse, there are seldom extreme hemorrhages and when they do occur they result from ulcerations of the polypoid growths which develop in conjunction with various forms of endometritis.

Although pain in the uterus itself is not a marked symptom of the chronic form, yet if the tubes become involved or the structures outside of the uterus, the pain resulting from these associated conditions may be severe. More marked at the time when exertion takes place, the pain may be a constant symptom. Sterility and abortion are common manifestations and are due to the inability of the uterine mucosa to provide a suitable bed for the impregnated ovum, or to the destruction of the lining membrane of the tubes and their consequent inability to transmit the ova from the ovaries to the uterus.

The general symptoms may not be marked, but if they are, it is the result of involvement of the surrounding structures rather than being due to any abnormalities in the uterus

itself. When general symptoms do occur they are manifest by loss of appetite, nausea, vomiting and general emaciation and debility. They may be so severe that the individual is entirely unable to carry on the simple duties of life.

Prognosis—Under adjustments the prognosis is favorable, subluxations being the primary cause of the disease. If the subluxations are reduced and the spine regains its normality in the kidney region and in the lumbar group, elimination is then normal and the resistive powers of the lining membrane of the uterus are sufficiently increased that they may throw off the toxins which come in contact with it, or at least absorb them so that they may be eliminated by way of the kidneys.

Senile Endometritis

Definition—This is an incoordination occurring in old women who have passed the menopause and is characterized by an atrophy of the mucous membrane together with inflammation.

In General—There is a general atrophy of the mucous membrane and the glands of the uterus and they are replaced very largely by connective tissue. The uterine cavity becomes partly or completely occluded because, as the adjacent walls come in contact with one another, the branches of the connective tissue cells interlace and form adhesions. These adhesions most often occur at the internal os, thus occluding the opening to the external and damming back the secretions of the uterus. Known as senile pyometra providing the retained secretions are purulent in character, and hydrometra of the senile variety if the retained secretions are non-specific in character.

Etiology—Subluxations at K. P. and at P. P. The subluxation at K. P. serves to decrease the possibilities of elimination of toxins from the body and this, together with impingements of nerves emitting from the middle lumbar region, serves to center the weakness in the generative tract. The

impingement in the lumbar region produces excessive expansion impulses in those nerves which supply the connective tissues and a decrease in the nutritive impulses in those which supply the epithelial cells. These two alterations, associated with an excessive quantity of calorific impulses in both the epithelial tissues and the connective tissues serve to produce this particular abnormality.

Symptoms—The onset of the disease is more or less insidious and occurs following the menopause; for this reason, it is known as the post-climateric endometritis. The most common symptom is that of leukorrhea, the discharge being extremely profuse, offensive, thin and purulent. This discharge is very irritating to the membranes with which it comes in contact and occasionally is productive of pruritis vulvae. Although hemorrhage occurs in minor degree it is not, as a rule, at the regular menstrual period, but at any time when the breaking of the adhesions which have been formed serves to rupture the blood vessels in those adhesions. It is for this reason that the amount of blood discharged varies materially in quantity, being dependent upon the size of the vessel which is ruptured. The leukorrheal discharge may be more severe at times than at others and particularly does it increase in quantity at periods corresponding to the menstrual flow.

Pain exists in the uterus due to lacerations and rupturing of the adhesions which have been formed, but it is seldom that they are present in structures other than the uterus itself, unless atresia or stenosis occurs and the uterine secretions are, for this reason, retained. When this condition exists, there is lumbo-sacral pain, a general loss of appetite and a gradual loss of strength with a consequent emaciation. Mental depression at these times is also a common symptom. If the retained secretions are septic in character, they may become dammed back through the fallopian tubes and produce inflammation of the ovaries or peritoneum. If the septic materials are ab-

sorbed into the serous channels there is a slight rise in bodily temperature and a marked loss of strength.

Prognosis—The prognosis is favorable under adjustments, providing the disease comes under the care of the Chiropractor before marked adhesions have been formed. If adhesions have been formed, the epithelial cells and the centers from which they are developed are absent and their place is taken by connective tissue cells which are branched and the branches of which intermingle. In this event, there are no epithelial cells or centers to build upon and, as a consequence, the restoring of the membranes to normal is not favorable. If, however, severe inconvenience results from occlusion of the cervical canal, due to adhesions, then the restoring of normal impulses to the uterine wall gives to that organ the possibility of severe contraction whereby the adhesions may be broken up and the cystic tumor will consequently disappear. In this far the prognosis is favorable and the patient may live for years without any undue discomfort from senile pyometra or hydrometra.

Endocervicitis

Definition—This is an incoordination characterized by inflammatory changes in the mucous membrane lining the cervical canal.

In General—The disease may occur either as a primary incoordination or as a secondary one. If primary, it is usually the result of toxins being deposited in the cervical canal directly from the external and is usually of the gonorrheal form. If not gonorrheal in origin, it is, as a rule, preceded by the introduction of poisons due to the use of instruments which have been improperly cleansed. If the incoordination is a secondary one it is due to direct extension either from the uterus or from the vagina, and of these two, the latter is the more common. Secondary endocervicitis, however, is comparatively a rare occurrence.

Etiology—Subluxations at K. P. and P. P. Like endometritis, this disease is one which may be divided into four different forms, known as the congestive, constitutional, gonorrheal and septic.

If the disease is of the congestive form it is, as the name implies, induced by obstruction in some one or more of the veins draining the cervical area. This, in itself, is a secondary condition dependent upon some associated primary lesion. This may be in the form of a flexion, version or prolapse of the uterus; the presence of a uterine tumor in some one of the adjacent organs serving to compress the drainage veins. If of the constitutional variety, the implication is given that the disease is associated with some constitutional disease but not that the one is dependent upon the other as a causative factor. If of the gonorrheal form, the gonococcus of Neisser is present and the history of a suspicious intercourse is an important factor in determining this form. The septic form is one wherein the inflammation is associated with toxins, as a rule, introduced by mechanical means from the external.

The traumatism of labor is a factor which is associated with many cases of endometritis, particularly of the septic form. It should not, however, be considered that the lacerations which are produced during labor are causative factors in the production of endocervicitis. It is essential that subluxations exist which affect the general bodily elimination and which weaken the resistance offered by the tissues of the cervix in order for these lacerations to have a deleterious effect. If the tissues of the cervix are normal in every way, being properly supplied with mental impulses, and if the excretory function of the body is normal, then the lesions which are formed are readily healed and no inflammatory changes occur. The functions particularly which are involved here are those of calorific and secretion, the former being in excess as well as the latter.

Symptoms—The earliest, and as a matter of fact, the most

distinctive symptom is leukorrhea. The discharge which is present is clear, colorless, thick and occasionally very profuse. In the gonorrheal and septic forms this excretion becomes suppurative and of a yellowish or creamy color, due to the presence of pus cells.

Hemorrhage is seldom a symptom and when it is present is due to the rupture of the small vessels, particularly during exertion of any form. Pain is not distinctive and as a matter of fact, is not present unless the inflammation progresses to such a degree that the cervical canal becomes occluded and the uterine secretions are dammed back in their cavity. When this occurs, contractions of the uterus result and the pains which manifest themselves are colicky in character.

This disease is very often associated with endometritis and with inflammation of the tubes, and when this is true the symptoms of the two latter diseases are so much more severe than those resulting from involvement of the cervix that the latter are in no wise distinctive.

Prognosis—The prognosis is favorable under adjustments in any of the four preceding forms, but the time occupied in arriving at satisfactory results is less in the congestive or in the constitutional forms than in the gonorrheal or the septic. This, because the inflammatory changes are more severe in the latter two and because the involvement is much more extensive, being associated with inflammation in the adjacent structures. The essential feature in any of these four forms, however, is the elimination of the causative subluxation, which, it must be admitted, is as readily done in the two more severe forms as in the two simple forms. The difference, however, exists in the fact that in the latter less destructive change has taken place and reparation more readily occurs while in the former, destruction has taken place to a marked degree and a greater time is required for Innate to properly repair the damage to the tissues.

Subinvolution of the Uterus

Definition—An incoordination of the uterus wherein the normal physiological process of involution which takes place after abortion or labor fails to occur, and as a consequence the uterus maintains a greatly increased size.

Etiology—Subluxations at K. P. or at P. P. or in both of these regions. It must be understood that involution which normally takes place following pregnancy is the result of a fatty degeneration which occurs as a normal physiological process at this time. This being true, it is essential that the vascular supply and the drainage of blood from the uterus should be normal in order to supply the serous system with proper nutritive materials to build up new tissue, and in order that the materials which are the products of the degeneration may be properly eliminated from the organ and carried to the excretory canals of the body. When this does not occur, the uterus remains in a hypertrophied condition either in part or as a whole, dependent upon the degree of involvement in its structure. The walls remain thick and heavy, although soft to the touch. This softness is the result of the congestion of blood and the deposition here of the degenerative products. As this is true of the uterus itself, it is also true of the ligaments which have become hypertrophied and thickened during the pregnant state. The ligaments remaining elongated and the uterus being unduly heavy, this is one of the most common predisposing factors in the production of prolapse and retro-displacement.

Although it is true that there are several abnormal conditions which are predisposing factors in the production of subinvolution, yet it must be remembered that these predisposing factors are, in themselves, abnormalities which are the direct result of subluxation causing nerve impingements. Thus, it can readily be seen that the subluxation is the basis

upon which subinvolution is founded, despite the fact that the preceding incoordination is apparently a causative factor.

Of these preceding and predisposing conditions, the most common is that of uterine displacement in any form. A prolapse of the uterus or a retro-displacement of the uterus following delivery is not an uncommon condition and is particularly due to lacerations of the cervix, of the perineum or any of the structures which serve to support the uterus in its normal position. These lacerations in themselves could not be causative factors if it were not for the presence of nerve impingements which do not permit of the lacerated surfaces properly healing. When they are present, however, and remain, they allow for the uterus and other pelvic organs to become displaced and when this occurs the blood supply or the drainage veins become occluded. When this occlusion occurs the process of involution is materially interfered with and, as a consequence, the organ remains in an enlarged state and ultimately becomes more and more displaced.

Inflammation of the endometrium following pregnancy is also a predisposing factor, but as in displacements, it is also in turn dependent upon sublaxations producing impingement on those nerves which supply the uterine mucosa. The reason for endometritis being a predisposing factor in the production of subinvolution is that there is invariably a marked congestion which mechanically interferes with involution.

When the patient gets out of bed too soon following a confinement, subinvolution is apt to occur because Innate Intelligence has not, as yet, had time to adapt herself properly to the changed condition and, as a consequence, prolapse results, which, in turn, produces a congestive endometritis. This also is true if the patient is bandaged too tightly around the abdomen during the puerperim period, because in this event the uterus is forced backward and mechanical obstruction occurs in the drainage vein.

Symptoms—Lumbo-sacral pains are present, of a dull,

aching character, and bearing down sensations in the pelvis are also distinctive. This latter because of the great size of the uterus and the inability of the ligaments and surrounding structures to properly support it. Leukorrhea is also common and is due to the excessive amount of fluids which bathe the secretory cells of the uterus and cervix. It is for the same reason that the menstrual discharge is increased to a marked degree.

Gastro-intestinal symptoms in the form of loss of appetite and constipation are common. Vertical and occipital headaches are also common. It is not uncommon for the general health to be impaired and the patient ultimately to become weak and emaciated.

It must be borne in mind that subinvolution is a disease usually associated with some other incoordination and the symptoms of the associated conditions are often so allied with those of the subinvolution that it is difficult to draw a distinct line of demarcation. For instance, in severe inflammatory changes there are all the symptoms of septic inflammation, together with those of subinvolution and the same is true of the various forms of uterine displacements.

Prognosis—The prognosis under adjustments is favorable, but the symptoms should be carefully studied to determine exactly what regions are involved. For instance, an excessive expansion in the body of the uterus may produce a tumor here which acts in a mechanical way to obstruct the drainage, and if so subinvolution occurs as an associated condition due to inability in carrying away the degenerative products. It would not be necessary, in this particular case, for a subluxation to exist anywhere except in the middle lumbar region. On the other hand, if a septic inflammation was present and associated with subinvolution, the K. P. region would be vitally involved and should be considered in making the analysis. Finally, the prognosis depends upon the associated condition, in that some of these require a longer period of

time to correct than others, and while the prognosis is favorable in all, yet the time element should not be overlooked.

Superinvolution of the Uterus

Definition—This is an incoordination characterized by involution following pregnancy, occurring to an abnormal degree so that the uterus becomes abnormally small. The condition is also known as acquired atrophy or puerperal atrophy.

In General—In this condition involution occurs, due to fatty degeneration, but the degenerative process does not stop when the normal size of the uterus is reached. Rather it continues until the uterus assumes a size much less than the normal. Frequently the length of the inner cavity is not in excess of one inch. Although the condition is extremely rare, it is more common in cases having undergone abortion than in those having reached full term.

Etiology—The etiology is due to a subluxation at P. P. This subluxation serves to produce nerve impingements on those nerves passing to the uterus in such a way that there is a deficiency in the nutritive impulses which line the entire wall and also in the expansion impulses of all the coats. So while involution is occurring and fatty degeneration is taking place, thus tearing down the tissues which have been present as a necessity during pregnancy, there are no impulses present, or at least an insufficient number to carry on the building up process which normally must take place in order that these degenerated tissues may be replaced.

Symptoms—Amenorrhea is a common symptom and is due to the contracted state of all the tissues of the uterus, including the blood vessels. These blood vessels not only become decreased in size, but their walls also thicken so that there is greater difficulty in their rupturing at the menstrual periods. Furthermore, atrophy exists in the cervix as well as

the uterus and the cervical canal is consequently materially decreased in size, and perhaps entirely occluded. If merely decreased in size, dysmenorrhea occurs, but if, as is usual, the occlusion is complete, then amenorrhea exists because there is no passage whereby the blood which does find its way into the uterine cavity may make its escape. This condition may result in the formation of a haematometra or it may break up through the tubes, being reabsorbed here, in the uterus and also by the peritoneum if it finds its way as far as the free end of the tube. The same factors which are productive of amenorrhea are also productive of sterility. If the cervical canal is entirely occluded, the spermatazoa cannot find its way into the uterus and if it is not entirely occluded, the abnormal condition of the uterine mucosa, much of which has been replaced by connective tissue, is not conducive to the development of the impregnated ovum.

There are heavy dragging pains in the lumbo-sacral region, although not so severe here as in subinvolution. Also the general health of the patient becomes impaired and she suffers from loss of appetite, general emaciation and weakness. The mental state of the patient is that of depression and frequently this becomes a chronic neurasthenia and frequently hysteria supervenes.

Prognosis—Prognosis is favorable, but more so in those individuals in whom the condition is a recent occurrence. This, for the reason that if the case is one of long standing the mucous membrane has become largely replaced by connective tissue and the possibility of rebuilding normal mucous membrane is more remote than if in the recent state.

Supravaginal Hypertrophy of the Cervix .

Definition—An incoordination characterized by hypertrophy of the cervix above the point where it is joined by the wall of the vagina.

Etiology—Subluxation at P. P. The condition is one where nerve impingements are produced upon those fibers leading to the upper part of the cervix and particularly involving those which transmit impulses of expansion. The expansion impulses being in excess serve to produce an overgrowth of the entire tissue in the upper part of the cervix and this frequently becomes so marked that the weight of the uterus is materially increased. The distinction between this form of enlargement and that which is classified as a tumor is in the fact that the enlargements of tumors are circumscribed, or at least confined to a comparatively small amount of tissue while here all the tissues in the upper part of the cervix are involved. Furthermore, the enlargement in this disease does not undergo secondary changes, while this is a frequent occurrence in both benign and malignant tumors. The entire distinction is dependent, therefore, upon the character of the fibers which are impinged and upon the extent of this impingement.

Symptoms—The symptoms as a rule, develop slowly because the prolapse of the uterus which results from the hypertrophied condition progresses in proportion as the enlargement develops. All the symptoms are dependent upon the prolapse of the uterus which follows the increased weight due to the additional tissue and it can readily be seen that the severity of these symptoms depends upon the degree of enlargement which takes place. If only slight, then the symptoms may be slight also, or it may be that they will not be apparent in any degree.

In those forms where the enlargement is extensive, backache is a common symptom, felt over the lumbo-sacral region and of a dull heavy character; this sensation is increased upon exertion of any form while it is decreased when the patient assumes the recumbent position. Sensations of weight and dragging are felt throughout the entire pelvis and these sensations are also decreased when the patient assumes the recumbent position.

If the prolapse occurs to such a degree that the membrane of the vagina is turned inside out, then the anterior supporting wall of the rectum is eliminated, as is also the posterior supporting wall of the bladder, and rectocele and cystocele result. If rectocele exists, constipation is common and the enlargement of the rectum becomes more and more pronounced as straining at stool always serves to force the fecal matter down into the pouch and produce a still further enlargement. When the posterior wall of the bladder becomes prolapsed and forms a cystocele, inability to properly empty the bladder is common and the patient often finds it necessary to assume the knee-chest position in order to produce the act of micturition. Also, the residue of urine which is usually left in the bladder following micturition, allows for the gathering of a sediment which, if of sufficient quantity, may ultimately produce cystic inflammation.

Leukorrhea is a common symptom, always present, but in this particular disease it is of a whitish or yellowish color and is non-irritating in character. Menorrhagia is common and sometimes metrorrhagia occurs if the obstruction to the drainage system is extreme. This obstruction results purely from the change in position of the uterus and the consequent undue pressure which is produced on the drainage vessel.

Sterility is common, in the complete form of prolapse because of the inability to accomplish the act of intercourse and in the incomplete form because of the congestion of the mucous membrane and its inability to offer itself as a proper bed for the reception and maintenance of the impregnated ovum. Headache in the occipital or vertical regions is also a common symptom.

The severity of the prolapse determines the severity of the general symptoms, which, as a rule, are dependent upon the gastro-intestinal symptoms. These include loss of appetite, nausea, vomiting, constipation and general indigestion. If the prolapse is complete, the enlarged cervix protrudes from

the vulva and the individual experiences difficulty in walking, due to the friction of the thighs upon the exposed membrane. This constant friction and constant exposure of the mucous membrane ultimately causes the surface to become dry and hard and eventually ulcers are apt to form.

Prognosis—The prognosis is favorable with the degree of prolapse, which in turn is dependent upon the degree of enlargement, always considered. It must be remembered that time is required for Innate to adapt herself to the changed conditions and tear down those cells which are present in excessive amounts. This being true, the time required for the correction of the condition is not only that which is consumed in replacing the subluxated vertebrae to the normal position. Even after this has been accomplished, adaptation must take place and the eliminating of the excessive tissues must be carried on.

Infravaginal Hypertrophy of the Cervix

Definition—An incoordination of the cervix characterized by an overgrowth of the tissues found below the point of union with the vaginal wall.

Etiology—Subluxation at P. P. This disease is met with only in women who have never borne any children and is an extremely rare condition. Impingement of the nerve fibers in the lumbar region leads to an excessive amount of expansion impulses being carried by those nerves which supply the lower part of the cervix. This distinction between this form of hypertrophy and the supravaginal form is in the fact that in the latter a different set of nerve fibers are involved. It is also true that in supravaginal hypertrophy the enlargement progresses to an extreme degree very often increasing the size of the cervix and uterus to such an extent that the added weight is productive of uterine prolapse. In this form, however, the enlargement seldom progresses to a degree sufficient

to produce symptoms of any consequence. The overgrowth extends downward into the vaginal canal and serves by its projection to shorten that tube in proportion to the increase in length of the cervix.

Symptoms—In the ordinary cases no symptoms at all are noticeable. In the more severe form, however, the hypertrophy may produce a partial occlusion of the cervical canal; or the position of the cervix may be so altered that the spermatazoon cannot find its way into the uterus, and thus conception cannot take place.

Intercourse is seriously interfered with by the existence of the cervix projecting into and shortening the length of the vagina. The degree of interference is dependent entirely upon the degree of enlargement. It is very seldom that the enlargement is sufficient to project from the vulvo-vaginal canal, but if this does occur and it extends out to the external, its surface becomes hard and horny and sometimes undergoes ulceration. If it does so project it also interferes with walking and with many other forms of exercise. Being constantly subject to friction with the thighs, the exposed surface may also undergo inflammatory changes.

Difficulty is sometimes experienced in distinguishing this form of hypertrophy from true prolapse of the uterus, but it should be remembered that hypertrophy either of the supravaginal or infravaginal types occur in virgins or sterile women while prolapse is most apt to occur in women who have borne children. Further, in hypertrophy, there are no indications of lesions either of the cervix or of the perineum, while these are usually present in prolapse of the uterus. In hypertrophy there is an elongation and conical shape of the cervix, while with prolapse the apparent elongation is not conical. In infravaginal hypertrophy the dome of the vagina remains the same and there is no relaxation of either the anterior or posterior walls, while in prolapse of the uterus, particularly where it is marked, relaxation of these walls and obliteration

of the dome of the vagina is characteristic. In hypertrophy of the cervix the uterus is not displaced and upon abdominal palpation its dome is found to be in normal position, while in prolapse of the uterus, the dome has descended and if it can be palpated at all it will be found in a much lower position.

Prognosis—The prognosis of infravaginal hypertrophy of the cervix is favorable and is dependent upon the release of pressure exerted upon those nerve fibers which supply the lower extremity of the cervix. Upon the degree of pressure depends the degree of involvement and necessarily if the involvement is severe, a greater length of time is required to reduce the subluxation. Also more time is required for Innate to produce Intellectual adaptation in such a degree that the excessive tissues may undergo destruction and absorption and their place be taken by normal tissue. The termination of the disease then, is not necessarily marked by the reduction of the subluxation but may be extended past this period.

Cervical Polypi

Definition—This is an incoordination characterized by the development in the cervix of an abnormal growth, simple in character and composed of various kinds of tissues.

In General—The cervical polypi are divided for the sake of convenience into three varieties: the mucous polypi, the fibroid polypi and the warty or papillary polypi.

Of all these types, the mucous polypus is the most frequent in occurrence. It develops from the glandular structures of the cervical canal and follows an inflammation of the mucous membrane lining the canal. The inflammation produces a congestion of all the cells and the intercellular substance of the mucous membrane and serves to occlude the opening from the ducts to such a degree that the glands are unable to properly discharge the substances which they secrete. When the gland mouths become occluded, the fluid is

dammed back into the glands and continues to increase until a marked distention is produced. This distention at first takes the form of the mound like margin on the surface, but ultimately it becomes constricted at its point of attachment and from then on is known as the polypoid growth. These enlargements are usually multiple, located in any part of the mucous surface and occasionally develop in groups. If these groups are located near the external os they protrude through this opening into the vaginal canal and extend as the fungoid growth.

Fibroid polypi are much more uncommon than the mucous variety and they occur usually as single growths. Originating in the intercellular connective tissue they begin to enlarge and at first appear practically the same as the mucous polypi except that they are harder in consistency. Eventually they become constricted also and extend as pedunculated masses into the cervical canal. If their pedicle is long enough, it allows for the main body of the growth to project into the vaginal canal.

The papillary growths, although uncommon, as compared with the mucous variety, are still comparatively of frequent occurrence. When they are present it is usually toward the lower extremity of the cervix or on the exposed surface in the vaginal canal. They begin as a thickening or hardening of the epithelial cells lining the mucous membrane and develop in very much the same way as the other two varieties, eventually becoming pedunculated, their main bulk projecting into the vaginal canal and attached to the cervical membrane, by a constricted mass of epithelial cells.

Etiology—Subluxations at K. P. and at P. P. or in the latter two forms at P. P. alone. If the variety of polypus develops from the glandular elements and is directly due to inflammatory changes in the mucous membrane, then care should be taken to adjust the subluxation which must exist at K. P. The lack of excretory impulses serves to dam back

practically all the fluids of the body and it manifests itself particularly in those membranes which are affected by local subluxations. In the case of inflammation of the mucous membrane lining the cervical canal, there are further impingements on the calorific nerves supplying this membrane and as a result inflammation occurs here. It is essential that the subluxation at K. P. be corrected as well as the local subluxation in order that the excretion may be normal.

In the fibroid form and in the warty variety of the cervical polypi the only fibers which are affected, are those supplying the tissues of the cervix with calorific and expansion impulses. The character of the tumor depends upon the type of tissue which is supplied by the nerves transmitting an abnormally large amount of the expansion and calorific impulses. If it is of the epithelial variety the tumor develops as a warty or papillary growth, while if it is of the connective tissue variety the growth manifests itself as a fibroid polypus.

Symptoms—Leukorrhea is the earliest and most constant symptom and is due to the congestion present in the mucous membrane lining the cervical canal which, in turn, is the result of constant congestion from friction of the polypoid growth upon the surfaces with which it comes in contact. The discharge which is present, is of a colorless or whitish hue and is non-irritating in character; this when the growth does not project into the vaginal canal and when the tumor does not become contaminated by toxins from the external. If this latter occurs, or if the tumor projects into the vaginal canal, the discharge becomes very profuse and may become purulent in character.

Abnormalities in the menstruation are not an uncommon condition and they are expressed in the form of dysmenorrhea or menorrhagia. If dysmenorrhea occurs, it is the result of a partial occlusion of the cervical canal due to the presence here of the polypoid growth or to a congestion of the membrane lining the canal whereby its lumen is markedly decreased in

size. If menorrhagia occurs, it is the result of a general uterine congestion together with a cervical congestion which produces a profuse flow of blood at the menstrual period. Here, too, the polypoid growth is not of sufficient size to occlude the lumen of the cervix to such a degree that the escape of blood is interfered with.

Hemorrhages from the uterus between the menstrual periods are a common symptom and the extent of the hemorrhage depends upon the size of the vessel which becomes ruptured. These hemorrhages are a result of the chronic congestion which exists in the uterine wall and occur particularly at those times when especial exertion is made.

The pain is not a constant symptom but is particularly present in those cases where dysmenorrhea exist. In this event the canal is partly occluded and severe contractions of the uterus may be necessary in order to expel the contents through the canal. These contractions give rise to colicky pains at the menstrual period. If the polypoid growth is of sufficient size to produce complete occlusion of the cervical canal, then amenorrhea results and a cystic tumor is formed in the uterus, which is filled with blood and serum (Haemometra and hydrometra).

Prognosis—The prognosis of the disease is favorable and the disappearance of the tumors may take place in one of two ways: Either they may undergo secondary changes and ultimately slough off, thus leaving the canal free, or they may cease to increase in size and the tissues of which they are formed be gradually absorbed. If the latter exist, naturally the time occupied in affecting a complete restoration to normal, is slower than in the former. In a general way it may also be said that tumors formed of the epithelial cells or from the connective tissue cells are slower in responding to adjustments than those of the mucoid variety. This, because of the fact that the latter is soft and composed of fewer cells, containing much serum in the intercellular substance. Conse-

quently, a destructive process is not so extensive and will not occupy the same length of time. In the epithelial variety or in the connective tissue variety, however, the intercellular material is at a minimum and is comparatively solid while the cellular elements are at a maximum and a greater destructive process is necessary in order to eliminate the tissues of which the tumors are formed.

Inversion of the Intracervical Mucosa

Definition—This is a disease characterized by a separation of the mucous membrane of the cervix from its underlying base and the eversion of that mucosa so that it projects from the external os into the vaginal canal.

Etiology—Several conditions may precede the actual eversion of the membrane to the external but all of these conditions are in themselves, the result of subluxations and hence the eversion is either directly or indirectly the result of nerve impingements at their points of emission from the spine.

Traumatic conditions are the most common which precede eversions of the intracervical mucosa. These traumatic abnormalities are the results of lacerations occurring during abortion or labor wherein the mucous membrane is detached from its underlying base and projects outside the external os. Although this condition is a traumatic one, nevertheless it is necessary that subluxations exist or there would be a complete healing of the lacerated surfaces and a reunion between the mucous membrane and the structures which underlie it. This is borne out by the fact that at least fifty per cent of all lacerations which are produced, heal of their own accord and thereafter produce no symptoms, either local or general. The fact then is apparent that when this does not occur there is a lack of reparatory impulses being supplied to the mucous membrane, and very often the same subluxations which affect reparatory impulses, also produce excessive quantities of

calorific impulses. The result of this is a chronic inflammation wherein there is a constant effusion of fluids to the surface and an inability of the surfaces of the region to reunite and form a clean cicatrix.

Chronic endocervicitis is also classed as a predisposing factor, and undoubtedly in many cases it does precede the detachment of the mucosa from its underlying base and its protrusion to the external. It should be borne in mind, however, that the inflammation in itself is the result of nerve impingements in the lumbar region and at K. P. Here the constant congestion serves to engorge and enlarge the mucous membrane, causing it to protrude into the cervical canal and dilate that comparatively small tube. Ultimately if this projection increases, the cervix is incapable of containing it and it begins to puff toward the vaginal canal until it ultimately protrudes as a soft, patulous mass. Particularly is this condition apt to occur where there is associated a pelvic tumor causing pressure upon the veins draining the cervical mucosa. In those conditions where this abnormality exists from birth, it is the result of improper development directly due to impingement upon those nerve fibers emitting from the lumbar region in the foetus and supplying the mucous membrane of the uterus.

Symptoms—The symptoms of this incoordination are dependent upon its extent and upon the associated conditions which are found in conjunction with it. In those forms which are associated with inflammatory changes in the cervix and with congenital defects, the eversion is comparatively slight and there are no characteristic symptoms to be considered. The condition may exist for years without the individual becoming aware of its presence except in the congestive form where symptoms arise from the congestion rather than from the protruding mucous membrane. If, however, the incoordination is manifest following some traumatic condition, the protrusion is apt to be more extensive and the secretions of

the vaginal tract act as an irritating substance which is productive of marked inflammation. Furthermore, if the resulting tumor is extensive, the friction of it against the vaginal wall is sufficient to produce congestion here with ultimately inflammatory changes.

Lumbo-sacral pains are common and give rise to a dragging sensation. Also there is a sensation of weight or bearing down in the pelvis together with vertical headaches or occipital headaches. Leukorrhea exists and the discharge is colorless or whitish in color and is non-irritating to the membranes with which it comes in contact. If the cicatrix is of sufficient extent to produce congestion which occludes in part the cervical canal, then amenorrhea or dysmenorrhea are symptoms. Sterility or abortion are common, due to the associated inflammation of the endometrium or to the occlusion of the cervix, thereby preventing the reception of the spermatozoa into the uterus.

Prognosis—Prognosis is favorable in any of these events, with quicker results to be expected in the congestive form than in the other two varieties. They may not be expected so soon in the evasions from traumatism, because greater structural changes have taken place and a greater length of time is required to build new tissues and to tear down those which have already been formed. Results are still slower in those cases resulting from congenital defect because here the case is one of long standing and the subluxated vertebrae will not so readily resume the normal states.

Acquired Atresia of the Cervix

Definition—An incoordination characterized by a complete occlusion of the cervical canal due to pathological conditions existing after birth.

Etiology—Subluxations at K. P. and at P. P. Usually this condition is preceded by the existence of some form of

pathological change in the mucous membrane lining the cervix and often these preceding conditions are classified as causative lesions in the production of this abnormality. It should be remembered, however, that the preceding abnormalities are in themselves the result of nerve impingements in the lumbar region and perhaps at K. P. as well and these causative subluxations are indirectly the cause of the acquired atresia.

Of all these preceding conditions, one of the most common is that of ulceration, followed by adhesions which manifest themselves as adaptative conditions. Particularly is this true in cases of malignant growths of the cervix. Carelessness in performing operations and in the introduction of the sound and other surgical instruments through the canal of the cervix, gives rise to the formation of lesions which, in turn, produce cicatrices and these result in adhesions. Even in this latter condition, although the abnormality follows the introduction of surgical instruments, and the formation of lesions due to carelessness in handling them, it cannot be disputed that many cases are on record where abrasions have been produced in the cervix and lesions have been formed which have healed without the productions of adhesions and therefore we are led to the conclusion that some abnormalities must exist in the tissue where these traumatic conditions occur that makes them slow in healing and gives rise to the possibility of adhesions forming. We are again led back to the subluxations in the lumbar region as causative factors, producing a lack of nutritive impulses and of reparatory impulses, as both of these two are vitally concerned in the reparation process which occurs in all trauma. Ulcerations following diphtheria, smallpox, or scarlet fever, are not uncommon as the result of inflammatory changes which occur in the cervix during the course of these diseases. Finally, the atrophic changes which occur in all the generative organs following the menopause and the semi-inflammation which accompanies these atrophic changes are often productive of ulcerations which result in

cervical adhesions serving to completely close the canal. Here again, although the disease is preceded by another disease and thus becomes secondary, still it is directly the result of structural changes occurring which are due to nerve impingements in the lumbar region and at K. P.

Symptoms—The symptoms are dependent upon the character of the causative lesion and upon the period of life during which the disease occurs.

The most common abnormality associated with the disease is that of the formation of cystic tumors wherein the uterus forms the cavity in which this fluid is found. These cystic tumors may be in the form of hydrometra, haematometra, pyometra or physometra. Hydrometra is most apt to occur in women who have passed the menopause and is the result of the damming back of the uterine secretions because of the occlusion of the cervix and the impossibility of these secretions making their escape in any other manner. After a certain time, however, the uterine membranes begin to absorb the fluids contained in the cysts at the same rate that they are formed by the secreting cells and as a result the enlargement remains of the same size, with little variation. It is seldom that the enlargement becomes greater than that of a small orange in size. The reason blood is not found in the uterus in this particular type is that menstruation no longer exists and there is no longer a monthly congestion in the membrane whereby blood vessels are apt to rupture.

Haematometra, on the other hand, is most apt to occur in women during the menstrual life and is due to the occlusion of the cervix and the consequent damming up of the menstrual flow together with the normal uterine secretions. Here, also, after a certain size is reached, absorption begins to occur and is carried on at the same rate that the fluids are formed. As a consequence, the cystic tumor does not vary materially in size. Sometimes, particularly in this disease, the fluids are dammed back into the tubes and they become distended, forming a

haematosalpinx. Occasionally, there is the escape of the contained fluids through the open ends of the fallopian tubes and thus a greater area for absorption is available.

Pyometra is an associated condition wherein there is the formation of purulent secretions which are dammed back in the uterine cavity and which cannot escape to the external, due to the closure of the cervical canal. The most common disease in which this is found is that of cancer of the cervix, which, by the formation of ulcers, serves to produce adhesions which occlude the canal so that the purulent excretions from the cancer must find their way into the uterus and form a cyst here. Here, also, there is the rapid formation of a cystic tumor and the retained secretions are often dammed back through the tubes. These secretions, however, coming in contact with the mucous membrane of the uterus and the tubes, are apt to produce inflammations here which result in adhesions particularly occurring in the tubes. As the result of these adhesions, the escape of the fluid out to the peritoneal surfaces is made impossible and peritonitis is not apt to occur. However, the formation of a larger cystic tumor of the uterus and the formation of a large pyosalpinx is apt to occur. The pain resulting from this particular form of cystic tumor of the uterus and the tubes is apt to be more severe than in the other form, because of the greater degree of enlargement existing at these times. Physometra is also associated more particularly with cancer of the cervix and is always associated with pyometra, being the result of the formation of gases in the already purulent excretion.

Other than the symptoms resulting from the dammed up secretions in the uterus and the tubes, acquired atresia of the cervix is not distinctive. The principal symptom resulting from these cysts, however, is that of pain, varying in degree as the tumor varies in size; pressure pains in the pelvis, resulting from the increased weight of the uterus and the tubes and the effect of this weight upon the floor of the pelvis and adja-

cent pelvic organs; also the inflammation of the uterine mucous membrane which is associated with some forms of cystic tumors of the uterus, particularly with pyometra and physometra. Of course, if the disease occurs during the menstrual life of the patient, amenorrhea is a significant symptom and when associated with the formation of a cystic tumor in the uterus, it is distinctive of atresia of the cervix.

Prognosis—The disease is dangerous to life particularly if it is associated with cancer of the cervix wherein adhesions have been formed which cannot be broken. This, because of the fact that the broken down materials given off from the cancer are dammed back in the uterus and produce septic inflammation here. This often gives rise to a general septicemia which results in the continual absorption of toxins into the fluid systems of the body and an overburdening of the excretory channel, finally to such a degree that they are entirely unable to excrete the toxins as rapidly as they are being formed and the vitality of the patient is progressively lower until death ultimately supervenes. If, however, the cancer has not progressed to a sufficient degree that secondary changes have destroyed the tissue centers upon which Innate builds, then the prognosis is favorable, and the adhesions may be broken down by the contractions of the uterus, tending to eliminate the fluids through the cervical canals. This process is often aided by the spontaneous formation of gases and the production of a physometra, which markedly distends the uterus to such a degree that the pressure is enabled to break through the adhesions which have been formed. In brief, the prognosis of acquired atresia when associated with cancer of the cervix, is dependent very largely upon the prognosis of the cancer and this, in turn, is dependent upon the degree to which the cancer has progressed in its secondary changes. The prognoses of the other forms, viz.: the hydrometra and haematometra are more favorable than in pyometra or physometra, due to the fact that there is no associated malignant

disease and all that is necessary here is to break down the adhesions which have been formed in the cervical canal. This is accomplished by the restoration of normal impulses to the uterine wall, whereby it is enabled to produce the normal degree of contraction and thus to force the fluids past the adhesions which have been formed in the cervical canal. It is also necessary that normal nutritive and reparatory impulses be supplied to that part of the cervical canal where the adhesion exists in order that they may be more readily broken down and new tissues more readily formed to take the place of the old.

Acquired Stenosis of the Cervix

Definition—An incoordination wherein there is a partial occlusion of the cervical canal due to pathological conditions which have occurred after birth.

Etiology—Subluxations at K. P. and at P. P., or at P. P. alone. This disease is also one which is preceded by some other abnormality and is the result of structural changes, which occur during the progress of the primary disease.

Probably the most common cause of cervical stenosis is antiflexion of the uterus, wherein the uterus becomes bent upon itself and thus serves to decrease the size of the cervical lumen. As this is true of antiflexion of the uterus, it is also true of other forms of malposition, although they are not so apt to result in stenosis, as antiflexion. This antiflexion and stenosis serves to compress the veins draining the cervical mucosa, and this produces a congestive endocervicitis, and very often a congestive endometritis which serves still further to decrease the size of the cervical canal. Ulcerations of the cervical canal resulting from inflammation or from the development of cancer in the cervix, serve to produce adhesions which may not entirely occlude the canal, but which decrease its size, so that there is difficulty in forcing the fluid through from the uterine cavity to the vaginal cavity. In other words,

the same conditions which are causative factors in the production of cervical atresia are also causative factors in the production of stenosis, except that in the latter case complete closure is not produced. Formation of benign growths in the cervical canal are also causes of atresia, due to the fact that these growths extend into and decrease the lumen of the cervix. In those events where the polypi extend into the external os and the vaginal canal the degree of occlusion is not so marked as in those cases where they develop higher in the cervix.

In any of these events, although it is admitted that the primary disease is causative so far as the secondary disease is concerned, still it must be granted that the secondary disease is directly the result of pathological changes resulting from impingements in the lumbar region and at K. P., so that ultimately the cause of the stenosis of the cervix is traced back to the presence of its subluxation or a combination of subluxations. Nerve fibers which are involved in the production of these pathological conditions are varied and upon the character and degree of fibers impinged, depends the pathological condition in its various forms, which ultimately results in stenosis.

Symptoms—The most common symptom of acquired stenosis of the cervix is that of leukorrhea which results from endometritis and endocervicitis, which conditions are usually associated with stenosis; this for the reason that stenosis is most often associated with antifixion of the uterus and when this is true, the antifixion which is productive of the stenosis is also productive of pressure upon the veins draining the uterine and cervical mucosa. This congestion of the mucous membranes lining the uterus or the cervix gives rise to an excessive quantity of intercellular fluid which comes in direct contact with the secreting cells. The secreting cells as an adaptative measure become hyperactive in trying to eliminate the increased quantity of fluid with which they have to deal.

This results in an enlargement of the secreting cells and an hypertrophy of the underlying tissues upon which the cells are placed. The leukorrhea is dependent in quantity upon the degree of antifixion, or in the absence of antifixion, upon the degree of structural change which is producing the congestion. Non-irritating in character, as a rule, this fluid is whitish in color and viscid. In those cases where malignant disease is associated with the stenosis, the leukorrhea is purulent in character, due to the presence of pus cells and is offensive in odor, due to the presence of pus and of other degenerative tissues.

Dysmenorrhea is another common symptom and is due to the obstruction in the cervical canal and the difficulty in forcing the fluids from the uterus through the constricted area. The degree of dysmenorrhea depends upon the degree of congestion in the mucous membrane and the degree of stenosis. If the stenosis is extremely marked, then severe uterine contractions are necessary in order to force the fluids through the cervical canal. This gives rise to colicky pains, particularly at the menstrual period. The condition is known as obstructive dysmenorrhea.

Sterility is a common condition and is due to the stricture of the cervical canal and the consequent difficulty experienced by the spermatozoon in finding its way to the uterine canal. This difficulty is exaggerated if the stenosis is the result of antifixion of the uterus, because during this condition the external os is so tipped that it comes in contact with the posterior vaginal wall and this, in itself, serves to occlude the lumen. Beside the difficulty which is experienced by the spermatozoa in finding their way into the cavity of the uterus, there is also the congestion in the uterine mucosa which makes it an unfit bed to accommodate the impregnated ovum and if impregnation should occur, abortion is very apt to intervene as a result of the inability of the mucous membrane to give proper attachment for the ovum.

Prognosis—The prognosis in this disease is dependent upon primary conditions and the structural changes which have occurred in the cervix during those primary incoordinations. If the stenosis is the result of an antifixion of the uterus, whereby the cervix has become partly occluded and the mucosa congested, then the prognosis is favorable and results should be obtained in a comparatively short time. If, on the other hand, the stenosis is the result of degenerative changes having taken place, as in cancers of the cervix, then the prognosis is dependent upon the degree of structural changes which have occurred in the cancer and the extent of the destruction of tissue centers. In this latter event the prognosis of the stenosis is dependent entirely upon the prognosis of the cancer and if the latter can be corrected by adjustments (structural changes not having progressed too far) then the restoration of normal impulses to the pathological tissues and to the walls of the uterus allow for the uterus to produce normal contractions whereby the adhesions are reduced and new tissues are formed in the place of the old. In all forms of stenosis of the uterus, other than those resulting from cancer of the cervix, the prognosis is favorable with the time limit dependent upon the degree of structural change which has occurred.

CHAPTER VI

DISEASES OF THE FALLOPIAN TUBES

Salpingitis

Definition—An incoordination of the Fallopian tubes characterized by inflammation.

Etiology—This is a very common incoordination of the tubes and is the result of subluxations at K. P. and at P. P. The disease is usually preceded by a primary disease which, because of the abnormal structural changes which it produces, gives rise to the secondary disease in the form of salpingitis. The most common of these primary diseases is that of endometritis and the tubes become involved due to the direct extension of inflammation into their cavities. Primary affection of the peritoneum is a comparatively rare occurrence, but occasionally cases are met with which are preceded by inflammation of the appendix or of the ovaries which extend into and affect the tubes. Again, a primary tuberculosis of the peritoneum may, by direct extension, involve the tubes in inflammatory changes, due in turn, to adhesion resulting from the tubercle. Occasionally the disease is present as a primary incoordination due to direct pressure upon the calorific and secretory nerves supplying the tubes. Remembering that endometritis may be of several forms, some of which are considered as simple and some of which are more destructive in their actions, we find that it is necessary to divide the inflammation occurring in the Fallopian tubes into two varieties dependent upon the severity of the inflammation which is manifest. If it is a simple inflammation, the disease is known as a catarrhal salpingitis, while if it is more severe and if the

excretion is purulent in character, it is classified as a purulent salpingitis.

Catarrhal Salpingitis

Definition—An incoordination of the mucous membrane lining the Fallopian tubes, which is characterized by simple inflammation, preceded as a rule by congestive or constitutional endometritis.

In General—Catarrhal salpingitis is a rare disease as compared with purulent salpingitis and as a rule the course which it follows, is mild in character and it is not associated with any grave structural changes. The disease is classified under the headings of acute and chronic catarrhal salpingitis.

Acute Catarrhal Salpingitis—In the acute form the inflammation involves the mucous linings of the tubes, but it is rare that either the muscular tissue, the connective tissue or the peritoneal covering is involved and when any of these latter are included in the pathological changes, the changes are merely characterized by a slight congestion and thickening of the tissue. The mucous membrane becomes oedematous due to the infiltration between the cells of the fluid which has found its way out from the congested blood vessels. As a result of this increase of fluid which is in contact with the lining secreting cells they become hyperactive and form a larger quantity of fluid than normal. This increased fluid finds its way from the tubes into the uterine cavity, through the cervical canal and is ultimately expelled by way of the vagina. The termination of the disease may be in the form of a complete disappearance of the symptoms in a short time, or the symptoms may continue, becoming less severe and eventually the disease merges into the chronic form. The termination of the disease is determined, as a rule, by the extent and severity of the inflammation, being more apt to pass into the chronic stage if it is extremely severe while tending to disappear and leave no detrimental effects if it is slight in character. During

the course of this disease, the tube is apt to become dilated and it may remain in a dilated condition even after the inflammation has entirely disappeared. Occasionally, during the acute form, adhesions take place between opposed walls of the tube or between the fimbriated extremity of the tube and the ovary with which these fimbria are in contact.

Chronic Catarrhal Salpingitis—In the chronic form of the disease, the inflammation is confined in its extent to the mucous membrane lining the tube and it is seldom that it involves the muscular tissue, connective tissue or the peritoneal covering, although when this involvement does occur, it is of the same form as in the acute type, being merely an infiltration and slight congestion together with a slight thickening of the tissue. The mucous membrane is oedematous and hypertrophied and the secretion of the cells lining the tube is increased in amount, although not to the same degree as in the acute form. The thickening of the membranes, however, and the hypertrophied condition of the tissues forming the wall, is more pronounced in the chronic form than in the acute. The extremities of the tube may become flabby or they may be occluded due to adhesions having been formed between the opposing walls; or in the case of the distal extremity between the fimbriated ends and the ovary. If the adhesions have been formed and the uterine end occluded the secretions of the tube are drained out into the pelvis and absorbed by the peritoneum. If, on the other hand, the distal extremities are occluded by adhesions, then the secretions are drained into the uterine cavity and from there expelled through the cervical canal into the vagina. Whichever of these conditions exist, there are seldom any serious effects which result from them, due to the fact that the secretion which is formed is simple in character and does not tend to produce septic changes. If both openings become occluded there is no means of escape for the fluid and a cystic tumor is formed, utilizing the walls of the tube as a limiting

membrane and thus a hydrosalpinx results. If the inflammation is of such a character that hemorrhages occur from the inflamed and swollen membrane, then the cystic tumor which is formed is known as a haematosalpinx. In either the acute or chronic form, the inflammation which is present in the tube usually destroys the function of the mucous membrane so that the ciliated activity of the epithelial lining cells is no longer possible. As a consequence of this alteration, in the tube, it is no longer possible for it to transmit the ovum from the ovary to the uterus and thus sterility is present. In these events, the ovum drops down and is absorbed by the peritoneum and ultimately eliminated from the body in the degenerated state. Occasionally ectopic gestation occurs, due to the passage of the spermatozoa through the cervical canal, the uterus and the tube, after which it comes in contact with the ovum and impregnates it. Adhesions between the tubes and the adjacent organs with which they are in contact is not an uncommon occurrence, particularly when cysts are formed which produce marked pressure of the tubal wall against the adjacent organs, when the friction between these two opposed surfaces sets up a congestive inflammation, resulting ultimately in adhesions.

Etiology—Subluxations at K. P. and at P. P. The subluxation at K. P. is productive of a general lack of elimination from the body and a consequent damming back of toxins and degenerated tissues into all the mucous membranes, whose function it is to excrete fluids from the body. The subluxation at K. P. gives rise to abnormalities in the tubes as well as in the uterus, where the disease usually starts, and the degree of impingement and the number of nerve fibers which are involved by that impingement. If the uterus alone is involved as it very often is, then the conclusion can be drawn that only those nerve fibers, calorific and secretory in character, which supply the uterine wall are affected by the impingement. If, on the other hand, the tubes become involved after the mucous lining of the uterus is inflamed, it is significant of the fact that

the nerve fibers, calorific and secretory in character, which supply this membrane are affected by the impingement as well as those which supply the uterine lining.

The character of the disease, whether it is acute or chronic, depends upon the length of time which the impingements are standing and upon the degree of affection which is produced by them. If the subluxations in the lumbar region affect the expansion impulses, which traverse those nerves supplying the distal or proximal extremities of the tubes, or any of the intervening mucous membrane then adhesions are apt to follow because of the increased quantity of connective tissue, the cells of which send out branches which unite and form a net work with the branches given off from the connective tissue cells of the membranes with which they are in contact. It can readily be seen that the extent of the affection is entirely dependent on the character of the fibers which are impinged and upon the time during which these fibers are affected.

Symptoms—Acute Catarrhal Salpingitis. The symptoms which are present in the acute form of the disease are very largely obscured by the symptoms of the congestive or constitutional endometritis which are associated with it and as a result, the incoordination of the tubes often runs its entire course and disappears without the symptoms being apparent to the patient. If it merges into the chronic form this may be done without the knowledge of the patient as to the existence of the disease in any way.

Chronic Catarrhal Salpingitis—In this form of the disease the symptoms are even less apparent than in the acute form and they are rarely noticeable by the patient unless there develops a hydrosalpinx or a haematosalpinx, in which event there are the sensations of weight and dragging in the pelvic cavity, and these symptoms are produced in relative proportion as the size of the tumor varies. As a matter of fact, leukorrhea is a symptom of both the acute and the chronic

forms, but the discharge from the tubes is mixed with the discharge from the endometrium so that it is hardly apparent. For the same reason hemorrhage from the tubes produces a flow of blood which becomes mixed with that given off from the uterine wall, so that there is nothing distinctive about this symptom. The presence of pain, due to congestion, is masked by the pain present in the uterine membrane and the sterility and abortion which are associated with endometritis cannot, for a certainty, be ascribed to the abnormal condition of the lining membrane of the uterus, or to the inability of the tubes to properly transmit the ovum. Headaches or backaches, or both, are associated with salpingitis although they are also present in endometritis and the increase of the pulse rate and the slight raise of temperature which accompanies salpingitis is also present in endometritis.

Prognosis—The prognosis as to the ultimate return of the tube to a normal state so far as the inflammation is concerned, is favorable under adjustments. If the disease has merged, however, into the chronic form and if destruction has taken place in the mucous lining of the tubes so the epithelial cells have been replaced by connective tissue, prognosis as to the final ability of the tubes to properly transmit the ovum is not favorable. If adhesions have been formed either at the proximal or distal extremities of the tubes and a cystic tumor has formed at the center, the prognosis under adjustments for this particular condition is favorable, because releasing of the impingement upon the affected fibers allows for a softening of the adhesion and the ultimate probability of their being broken up from the pressure which is exerted in the cystic tumor.

Purulent Salpingitis

Definition—An incoordination of the mucous membrane lining the Fallopian tubes which is characterized by inflammation of the septic or gonorrheal forms.

In General—The disease may be either acute or chronic in character, dependent upon the degree of impingement which occurs in the lumbar region and at K. P. The septic form of salpingitis usually originates as an acute affection, but more rarely it begins as a sub-acute affection which progresses slowly and continually, following a chronic course. If the disease is gonorrheal in character, it usually begins as a sub-acute affection, follows a chronic course which is more or less prolonged in extent and it is unusual for the chronic form of the disease to be preceded by the acute incoordination. Occasionally only one of the tubes is affected, particularly in the acute form, but as the disease tends to merge into the chronic form the other tube is almost invariably involved. This involvement takes place because of the extension of the inflammation from the uterus first to one tube, and at a later period to the other tube, and as long as the endometrium is affected by inflammation there is a possibility of the second tube becoming affected. In those cases where the endometrium disappears while inflammation is existent in one tube and before the second tube has been involved, then it is unusual for the second tube to become inflamed. This is not for the reason entirely that contact must be produced between associated membranes in order for the inflammation to progress from one to the other. It is, however, essential that the subluxation which is producing the impingement on one side, or a similar subluxation of some closely allied vertebra, be present in order to produce inflammation on the opposite side to the tube which is originally involved. In those cases where only one tube is involved following an inflammation of the endometrium, and where the endometrium becomes again normal it is significant of the fact that the subluxation producing the original involvement has been partly adjusted, either through an intelligent application of forces or by accident.

Acute Purulent Salpingitis—This disease extending from

the mucous membrane lining the uterus begins in the mucous lining of the Fallopian tube and progresses rapidly to the muscular tissue, the connective tissue and to the peritoneal covering. The progress of the disease is very rapid and in a very few days the congestion of the blood vessels and the overgrowth of the tissues forming the several coats has become so extensive that the tubes assume the size of about one inch in diameter. The inflammation being very severe usually involves the fimbriated extremity to such a degree that adhesions are formed between the adjacent walls of the tube, and the pus which is given off from the mucous membrane must find its escape through the uterine end of the tube. This end of the tube is seldom involved by adhesions during the early course of the disease, but remains freely open and offers little or no obstruction to the passage of the secretions into the cavity of the uterus. Occasionally the fimbriated extremity does not become occluded by adhesions and when this condition exists, the pus may make its escape into the peritoneal cavity where it comes in direct contact with the ovary and this very vascular membrane. As a result of the overgrowth of the tubal wall, it often becomes markedly elongated as well as increased in diameter and as a consequence, assumes a distorted and tortuous course, although as a rule, it is soft and pliable, being formed of loose connective tissue with large quantities of fluid.

In the acute form, if the subluxations are reduced either by the intelligent application of forces, or by an accidental concussion, the impingement is released on the nerve fiber supplying the tube and as a consequence, there is a rapid decrease of the inflammation, together with a softening of the adhesions which have been formed at the tubal extremities. In this event, the tube may again return to its normal condition and function normally. On the other hand, the escape of pus into the peritoneal cavity may produce a general peritonitis which will result fatally. In the majority of cases of the acute

form, however, the disease progresses to the chronic stages and merges ultimately into that form of disease. When the disease does become chronic in this way, the structural changes in the tubal walls become so extensive that they are entirely incapacitated to perform their normal function and as a result, the patient is subject to more or less chronic invalidism throughout the balance of her life. A minority of the cases, not under the care of a Chiropractor, result favorably due to the restoration of normality in the involved tissues by accident. In these conditions, some accidental concussion serves to reduce the subluxation and as normality returns, the inflammation disappears and the adhesions which may have been formed become broken up, due to the softening of the connective tissues which form them.

Chronic Purulent Salpingitis—In the chronic form of the disease the lesions are produced in very much the same manner as in the acute form and the adhesions are more apt to produce pyosalpinx or physosalpinx. It is less common for the adhesions to become softened and to disappear than in the acute form, very largely because the subluxations which are productive of the pathological changes have been existent for a greater length of time and are less apt to be reduced by accidental concussion. In the chronic form fimbriated extremities of the tube are usually occluded by adhesions, but less frequently is this true of the uterine end. Thus it is that the fluids by the hyperactivity of the cells may be more readily carried away into the uterine cavity, thence to the cervical canal and into the vagina. As long as the opening in the uterus remains free from adhesions or from occlusion due to congestion, the tube does not become distended with pus. In this event the condition is known as chronic adherent salpingitis or as interstitial salpingitis and is, as a rule, the aftermath of the acute form of the disease. The oviduct undergoes structural changes, becoming markedly enlarged and this enlargement affects the connective tissue and the muscular

tissue as well as the mucous lining. This increase in the amount of tissue is not manifest only by an increase in the diameter of the tube, but also in its length, so that it becomes tortuous and usually club shaped. The walls of the tubes may be either hard or soft, dependent upon the condition which exists in the tissue. In the former case there is a marked overgrowth of the connective tissues with a comparatively small degree of fluid infiltration, while in the latter event the fluid infiltration predominates and there is a comparatively small increase in the connective tissue. The infiltration and hypertrophy occurs particularly at the fimbriated end of the tube and gradually decreases from here until the uterine end is reached. It is this fact that gives to the tube its club-shaped appearance. Occasionally cases are met with where the entire tube is affected by hypertrophy and infiltration and in these events the enlargement is more or less constant throughout its entire extent. As the enlargement progresses, the layers of the mesosalpinx are forced apart and sometimes this enlargement progresses to such a degree that the layers of the mesovarium are also forced apart and the tube is permitted to come in direct contact with the surface of the ovary. Occasionally adhesions occur not only at the extremities of the tube but also at points near its center, and this alteration in structure gives to the enlargement a multilocular appearance. In each of these lobules which are thus formed there are quantities of pus emitted from the lining membrane which serve to produce several beaded sacculations. In cases of long standing, the mucous membrane may be replaced by connective tissues so that secretion no longer takes place. When this condition occurs, absorption of the contents of the tube progresses until finally all the fluid is taken from the lumen and the tube remains merely as a cordlike band. When both extremities of the tube become occluded by adhesions or by congestion of the membrane, there develops either a pyosalpinx, a physosalpinx or a haematosalpinx. Three factors may produce occlu-

sion of the tube. First, there is the condition of congestion of the mucous membrane, together with an overgrowth of the underlying connective tissues which serve to decrease the lumen until it is finally completely occluded. Second, severe inflammations are associated with ulcerations and when the cicatrices of these ulcers begin to form they are produced by connective tissues, which, coming in contact with adjacent raw and inflamed surfaces, send out branches which intermingle with the branches of the other surface and ultimately the tissues grow together. Third, by the overgrowth of the connective tissue and the muscular tissue the tube becomes elongated and necessarily becomes tortuous in its course. The course which is followed by the tube leads to sharp bends which may, in themselves, give rise to a complete closure.

Occlusion of the fimbriated end of the tube may result in two ways: First, inflammation occurring in the fimbriated extremities produce an effused fluid between the cells which serve to enlarge the fimbriated ends and upon the surface serves to make them mat together. The serums which are thus thrown out to the surface of the fimbria and cause them to mat together ultimately become solidified and as a result of this solidification they undergo organization which produces adhesions between the fimbria and the adjacent organs, such as the ovaries, the peritoneum, the uterus or the rectum, and thus the occlusion is produced. Second, the fimbriated extremities of the tubes are composed very largely of mucous membrane with a comparatively small amount of connective tissue upon which the epithelial cells are placed. This tissue becomes enlarged and congested from the infiltration of fluids and from hypertrophic changes, but are more or less stationary in their positions. As the connective tissues of the body of the tube undergo hypertrophy, the tube becomes elongated and the main canal extends out and over the fimbriated ends until they are ultimately covered and hidden from view. This gives to the end of the tube a smooth rounded appearance

rather than the serrated edge which is produced by the fimbria. Later this projection of connective tissue around the fimbria contracts and squeezes these small radicles, pressing them back into the lumen of the tube, where they remain in minute folds. It is the existence of these fimbria within the lumen of the tube, being as it were turned inside out, that decreases the lumen and ultimately entirely obstructs it.

Cystic tumors of the tube are usually pear-shaped, due to the fact that the uterine end undergoes little structural alteration while the distal extremity becomes markedly enlarged and is more subject to distension by the fluids which are contained. It is rare that the affection involves the entire tube in the same proportion, but when this condition does exist the tumor which it produces is of equal diameter throughout its entire extent. Sacculations of the tube in cystic tumor are more apt to occur in pyosalpinx than in the less severe forms, due to the fact that adhesions are less extensive in the simple forms. It is the existence of several of these adhesions in the course of the tube that serve to produce the sacculation. These multilocular cystic tumors usually all contain a purulent fluid, but in rare instances the different sacculations of the same tube may contain different substances, such as serum, pus and blood.

Pyosalpinx—This is a condition wherein the cystic tumor of the tube is filled with pus. The size of the enlargement is variable, dependent upon the degree of activity which exists in the cells lining the cyst. If they are extremely active, the cyst may be small, not exceeding one inch in diameter, but in some events the distension may become so marked that the tumor attains a size of five or six inches in diameter. These latter cases, however, are rare and it is seldom that any great degree of size is attained by this form of cyst. Originally the substance which is contained is septic in character, but later it becomes simple and in those cases which are chronic this alteration from the purulent to the simple form occurs in

fully half of such cases. When the contained fluid changes from the purulent form to the simple form, the simple tumor is then known as a hyposalpinx instead of a pyosalpinx. In these circumstances, however, the more solid materials which were contained in the pyosalpinx are thrown down from the solution and are deposited upon the cystic wall, leaving the fluid which is contained clear in color and serous in character.

Finally a pyosalpinx may become a haematosalpinx, due to the rupturing of one or more blood vessels contained in the wall. The rupturing of these vessels may be due to external pressure or it may be due to the tortuous shape which the tube is forced to assume because of its elongation. When the tube first begins to distend, due to the accumulation of fluid, the walls are thick, but as the enlargement progresses the tissues alter their position and the wall becomes thinner. If the distention continues indefinitely the walls become more and more susceptible to internal pressure and ultimately a rupture is apt to occur, allowing the contained fluids to find their way out into the surrounding peritoneal cavity. If the distended tube is in direct contact with some of the surrounding hollow viscera, this perforation may extend not only through the wall of the cyst but also through the wall of that viscus with which the tumor is in contact. In this event the fluids are usually eliminated to the external or are taken up by the serous system of the body.

Sometimes the adhesions which have been formed at the ends of the tubes and which are productive of the cyst, undergo resolution and automatically allow for the escape of pus into the uterus or into the peritoneal cavity. In the case of the pyosalpinx adhesions are usually formed between the tumor and the adjacent structures; particularly is this true of that part of the peritoneum forming the culdesac of Douglas and the posterior layer of the broad ligaments. In those cases where the pyosalpinx becomes adherent to the rectal wall, the

pus becomes mixed with the materials absorbed through the walls of the rectum and as a consequence it gives off a fetid odor. In those cases where the occlusion at the uterine end of the tube is the result of torsion, there may be the escape of pus into the uterus intermittently, due to a change in the position of the tube which allows temporarily for a cessation of the pressure here. In the event that the pyosalpinx is a chronic tumor, and in the event that adhesions have been formed between it and some of the adjacent hollow organs, the cyst may become markedly enlarged, due to the beginning of an acute inflammation in the mucous membrane which lines it. This for the reason that toxins are transferred from the linings of the adjacent hollow organs to the mucous membrane which lines the cyst. This membrane is already subject to inflammation but it becomes more pronounced as it becomes necessary for its secreting cells to take care of and eliminate larger amounts of toxins.

Hydrosalpinx—This is a condition wherein the tube is inflamed, where the extremities are occluded and where the fluid which is given off from the inflamed membrane is simple in character. This condition is more apt to occur in catarrhal salpingitis, while the pyosalpinx is more apt to exist as an associated condition with purulent salpingitis. Even in old chronic cases of purulent salpingitis, the hydrosalpinx may manifest itself, due to the changing of the purulent fluid to the simple form. In this event it is the result of the solid substances being eliminated from the solution and becoming adherent to the walls of the cyst. This fluid is serous in character, as a rule, but varies somewhat in its character and its color. Occasionally small quantities of blood are found or small quantities of pus, but not sufficient in extent to make of the cyst a hydrosalpinx or pyosalpinx. It is rare that a hydrosalpinx gives rise to inflammatory changes in adjacent organs with which it may be adherent. This, for the reason that the fluid which it contains is simple in character and even

if it does find its way into adjacent secretive tissues, it does not burden them to such an extent that inflammation occurs. For this reason, rupture of a hydrosalpinx may occur, the fluid finds its way into adjacent organ or the peritoneal cavity and be readily absorbed or thrown off from the body without producing deleterious effects. As in the pyosalpinx, this cyst is usually larger at the fimbriated extremity of the tube than at the uterine end, and thus it is that it assumes a pear shape. Variable in size, from one inch in diameter to five or six inches in diameter, this form of cystic tumor is not, as a rule, much in excess of two inches. Here, as in the pyosalpinx, the wall is thickened at the beginning of the inflammation, but as the distention occurs, the tissue calls are readjusted and the wall becomes thinner and thinner, until finally it may rupture and discharge its contents.

The mucous membrane may become entirely destroyed, due to the inflammatory and destructive changes and its place be taken by connective tissue cells which give to the tube a characteristic hardening. When this occurs there is no longer the possibility of the formation of fluids and finally the contents are all absorbed and the tube remains as a hard, cordlike structure. Intermittent discharge of the contained serum into the uterine cavity sometimes occurs when the uterine end of the tube has been occluded, due to torsion and the intermittent discharges occur at those times when the tube tends to straighten and change its position.

Haematosalpinx—This is a condition wherein the fallopian tube contains blood and, although it is a rare condition, it is sometimes found following a pyosalpinx or pydrosalpinx. It is extremely rare for this condition to exist if not preceded by one of the other two forms of cystic tumor. After the hemorrhage has occurred from the mucous membrane of the tube, it may undergo absorption and ultimately disappear. Occasionally only the serous elements of the blood are absorbed and the solid constituents remain to form a tarry mass.

If the haematosalpinx is not preceded by a pyosalpinx or a hydrosalpinx it rarely assumes a size greater than one and one-half inches in diameter. It is for this reason that the walls of this particular type of cyst seldom become as thin as those which are found in the other two forms and rupturing of the tube seldom occurs. In old cases of pyosalpinx or hydrosalpinx, which have been changed to the haematomatous form, a still further alteration may occur. If the mucous membrane lining the cyst begins a secondary active inflammation and pus is discharged into the already partly distended tube, the time will finally be reached when the purulent secretion will predominate and the blood will be a minor consideration. In this event the tumor will be known as a pyosalpinx. The size of the haematosalpinx is governed very largely by the size of the vessel which ruptures and produces it and whether this vessel is a vein or artery. If an artery ruptures, which is comparatively large in size, the pressure of the blood in it is comparatively high and the fluid will continue to escape until such time as the pressure in the tumor becomes equal to that in the vessel. If, on the other hand, it is a vein which ruptures, the pressure is comparatively low and the tumor will not be so markedly distended when the point of balance is reached between the pressure in the vessel and that in the cyst.

Extension of the Inflammation to Adjacent Organs—There are five ways in which the infection of the tube may be transmitted to adjacent organs of the pelvis. First, the secretions of the inflamed membrane may escape through the fimbriated extremity of the tube where it comes in contact with the ovaries and that part of the peritoneum which forms the mesovarium or the mesosalpinx. Second, the toxins from the contained fluids may be absorbed by the membrane and transmitted through the lymphatic canals to adjacent organs. Third, the toxins may proceed by the intercellular passages to the mesosalpinx and produce an inflammation of this particu-

lar part of the broad ligament. Fourth, a cystic tumor of the tube may rupture and the contents escape into any of the adjacent organs, dependent upon what point in the wall is ruptured. Fifth, if adhesions are formed between the pyosalpinx and adjacent structures, there is a direct communication of the intercellular passages between the cyst and the walls of those organs. Through these passages the products of the severe inflammation may find their way and if subluxations exist affecting those nerve fibers which supply the organs into which the toxins find their way, inflammation is apt to result.

If the escape of the fluid is through the fimbriated extremity of the tube, it is due to a release of the pressure which ordinarily exists at this extremity in purulent salpingitis. As a matter of fact, this condition is uncommon because adhesions are usually formed which prevent the escape of the fluid, but in those events where the lumen is decreased in size or obliterated because of congestion or because of torsion in the tube at or near the fimbriated extremity, then slight alteration, either in the degree of congestion or in the position of the tube, will allow for the escape of the toxic products. This escape of fluid is usually slow and ultimately results in adhesions being formed between the ovary and the fimbriated ends of the tube; thus it is that escape of fluid through this channel seldom affects the peritoneum in inflammation because the inflamed fimbria become adherent to the ovary and completely occlude the distal extremity before the fluids have had time to come in contact with the peritoneum in any large amounts. Here is a very nice example of an adaptative process showing the Innate Intelligence at work in forming a protection, for the peritoneum in order that it may not become infected with the toxic fluids. It is seldom that the fluids escape in large quantities before the end of the tube has become sealed, but when this does occur it is very apt to result in a peritonitis and produce a fatal termination.

The extension of the inflammation to adjacent organs due

to the transmission of the septic fluids through the lymphatic channels is not an uncommon occurrence and it usually results in the formation of adhesions between the tube and the surrounding peritoneum or other adjacent organs with which the pyosalpinx may be in contact. The adhesions which are formed with the surrounding organs or with the peritoneum serve to confine the septic fluids within the limits of the pyosalpinx. Occasionally an extensive peritonitis results if the mental impulses being supplied to the peritoneal tissues which are brought in contact with the fluids are deficient in quantity or quality. In the event that the lymphatic channels lead from the fimbriated extremities of the tube toward the ovaries they may affect the covering of the ovary and the ends of the tube to such an extent that an abscess will be formed. It is more common for extension to take place through the lymphatic channel when a pyosalpinx exists than when the uterine end of the tube remains open and the pus is allowed to escape into the uterine cavity.

The inflammation may become apparent in the layers of the mesosalpinx due to the passage of the septic fluids through the tubal wall and into the tissues forming this particular part of the broad ligament. It is necessary for the extension to take place here through the intercellular passages and it is more apt to occur where a pyosalpinx exists which serves to separate the two layers of the mesosalpinx and allow the tube to come in direct contact with the anterior layer of the broad ligament. Sometimes, however, where no pyosalpinx exists, there is an extension of the inflammation in this manner and a cellulitis exists either in the mesosalpinx, in the mesovarium or in the other parts of the broad ligament. All of these structures being formed by two layers, there is the possibility of the inflammation producing an exudate which gathers between them and thus constitutes an abscess either of the main body of the broad ligament, of the mesovarium or the mesosalpinx.

If the pyosalpinx becomes extremely large, then the walls of the tube become distended to such a degree that they are made extremely thin, and in this event there is always the possibility of perforation of the wall and the escape of pus into the surrounding structures. Particularly is perforation of the wall of the cystic tumor apt to occur when the patient exerts herself unduly as in heavy lifting or straining or in excessive coitus.

If adhesions are formed between the pyosalpinx and adjacent organs there is an organization of the tissues between these structures and a greater possibility of the toxic fluids finding their way through the wall of the pyosalpinx into the tissues of the adjacent organs than as if the peritoneum intervened. If there is a free surface of the peritoneum there is a greater possibility of absorption of the toxins and their ultimate elimination from the body, while if adhesions have occurred the toxins are more or less confined and concentrated and have a greater deleterious effect.

Incoordinations Which Are Apt to Result from Purulent Salpingitis—Adhesions are the most frequent result of purulent salpingitis and may vary to a marked degree in extent, being either a local condition or one which involves all of the tissues surrounding the inflamed tube. If it is a local condition it, as a rule, involves only the fimbria of the tube, which usually become adherent to the surface of the ovary, but if extensive, adhesions may be formed between the cyst and any of the surrounding adjacent organs, such as the intestines, the rectum, the uterus or the layers of the broad ligaments. These adhesions are formed by the fluids finding their way, together with the solid substances, into the surrounding intercellular spaces and ultimately emerging to some surface where they undergo organization and become laden with connective tissue cells. As these connective tissue cells develop they send out branches which become intermingled with adjacent surfaces and thus the adhesions are formed. In the beginning these

adhesions are soft and formed of friable tissue, but later they become tough and hard so that it is a difficult matter to separate them. Adhesions are almost always the result of the extension of the inflammation to the peritoneum which becomes inflamed and thus there is associated some form of peritonitis. If this peritonitis is of fibrinous variety there are large quantities of lymph given off which solidify and rapidly form adhesions, thus limiting the extent of the inflammation and confining the toxic substances in a comparatively small area. On the other hand, if the peritonitis is of the serous or suppurative form the adhesions which are produced are soft and readily broken up and do not offer themselves as serious obstruction to the passage of the toxins through other surfaces of the peritoneum. Adhesions which become general in the surrounding peritoneum may prove serious to the life of the patient, particularly if they involve the intestines to the ureters. If adjacent coils of the gut are adherent they may serve to constrict the opening to such a degree that obstruction results and its consequent serious manifestations. If, on the other hand, the adhesions are strong and become fibrous they may produce a tight band which extends across the ureter, compressing it and resulting ultimately in a hydro-nephrosis.

Peritonitis—Peritonitis is a common consequence of purulent salpingitis, although the local form is much more common than the diffuse form. This, for the reason that no particular part of the peritoneum is made subject to the rapid absorption of the septic fluid. As a rule, the distal extremity of the tube becomes adherent in the early stages of the disease and the only way in which the toxins can find their way to the surface of the peritoneum is through the serous channels leading through those surfaces. This process is necessarily slow and the excretory channels of the serous system are enabled to carry them off and the only ill-effects which result are the local inflammations which occur at those points where the inter-

cellular channels extend to the peritoneal surfaces. In those cases where adhesions are not formed at the fimbriated end of the tube a severe and general peritonitis is apt to result, due to the large quantities of the virulent excretions which find their way to large areas of the peritoneum. Rupturing of an abscess which had been formed between the tube and the ovary or between the layers of the broad ligament may also allow for the rapid discharge of large quantities of fluid, which, coming in contact with extensive areas on the surface of the peritoneum, give rise to a general inflammation here. Occasionally severe exertion upon the part of the patient serves to rupture adhesions which have been formed between a pyosalpinx and the intestines, or the rectum, or the bladder, and this alteration allows for the escape of the substances contained in the abdominal cavity or pelvic cavity and thus a general peritonitis originates. As this is true of adhesions between the pyosalpinx and other structures, so it is also true in adhesions between a small walled off abscess and those surrounding structures.

General Septicemia—General septicemia from absorption of septic material is not so apt to occur in the chronic forms of purulent salpingitis as in the acute forms because in the former the cyst or the abscesses are walled off by heavy connective tissue walls, while in the latter form the walls are much thinner and allow for a greater absorption of septic materials. Then, too, in the chronic forms the fluid which is contained in the cysts is very apt to become simple and the absorption of the fluids is not followed by deleterious effects to the general system because the toxins are not present to be neutralized, and the vitality of the body is not utilized and overburdened by these conditions. Where septicemia does exist it is manifest by the patient becoming emaciated and weakened, possessing a general dislike for all bodily exertions.

Abscesses—When the inflammation extends from the tube to the surrounding layers of the peritoneum it becomes

involved with excessive heat and excessive secretion, which are also septic in character. However, before these septic fluids have had time to spread to the adjacent structures, adhesions may be formed around the affected area and thus it will be effectively walled off. Not only is the peritoneum involved in a thickening which serves to wall off the involved area, but the wall of the intestine and the omentum will also be brought into play to help form this wall. The extent of the abscess depends upon the extent of the area affected by inflammation and the rapidity with which the adhesions are formed.

Inflammation of the Broad Ligament—The septic materials which are secreted by the epithelial cells lining the fallopian tubes in case of purulent salpingitis may escape from the fimbriated extremity of the fallopian tubes and extend into and between the layers of the mesosalpinx without first infecting the surface of the ovary or the mesovarium. This condition exists because those nerve fibers supplying the tissues closely adjacent to the distal extremity of the tube are not impinged and thus these particular structures are not susceptible to the effects of the toxins. On the other hand, that part of the mesosalpinx which is found removed from the distal extremity and perhaps that part of the broad ligament which constitutes its anterior wall are affected by a lack of motor impulses and thus these tissues are susceptible to the action of the septic fluids. For this reason, a cellulitis involving the cells constituting the broad ligament develops and if it is suppurative in character, being a direct extension from the purulent salpingitis, septic materials may be formed which cannot be absorbed and carried off through the serous channels as rapidly as they are manufactured. When this condition exists, abscesses form between the layers of the broad ligament, which, if they are not walled off by heavy connective tissue walls, rupture and allow for the escape of the retained secretions into the peritoneal cavity, thus resulting, very often, in a fatal peritonitis.

Abscesses and Cysts at the Distal Extremity of the Affected Tube—In the early stages of the disease one of the first developments is the infiltration of the fimbria at the distal extremity of the tube and the consequent giving off of large quantities of fluid from these fimbriated extremities which serve to bind them to the surface of the ovary. This matting together of the fimbria between one another and with the ovary results in the formation of a sac or pouch at the distal extremity in which quantities of pus gather. In these cases an abscess is formed which is in direct contact with the ovary and thus it is that the ovary becomes affected by the extension of the inflammation either through the fibrous coat which forms its capsule or by means of the rupture of a Graafian follicle into the abscess. These abscesses which are formed are, as a rule, found outside the constricted area of the tube and thus they are not classed as pyosalpinx. They are, in fact, easily separated from the pyosalpinx if such do exist, by the formation of adhesions at the outer constricted part of the tube. Usually these abscesses are firmly adherent to all surrounding structures with which they come in contact, because of their extension through the walls of the contained secretions and the solidifying and ultimate organization of these fluids after they reach the surface of the abscess. The extent to which the adhesions take place depends largely upon the degree of inflammation and upon the size of the abscess which is formed. If the inflammation is very severe, large quantities of fluid are produced which readily undergo organization and thus form adhesions. Upon the size of the abscess depends the number of organs with which the abscess comes in contact and the pressure which is produced between the external surface of the abscess and those adjacent organs. If a cyst of the ovary becomes adherent to the fallopian tube which may be involved simply by inflammation or perhaps by a pyosalpinx, and if the wall between these two organs becomes absorbed after degenerating, then a cyst is produced uniting the

involved ovary and the tube. The cysts of the ovary may become very much enlarged, seldom, however, attaining a greater size than that of an orange. On the other hand, if the uterine end of the tube remains open, this allows for a drainage of the ovarian cyst into the uterus, through the cervix and to the vagina.

The fluid which is contained in the abscess may lose its septic qualities and become simple in character, in which event the enlargement usually decreases in size and may ultimately disappear entirely.

Fistulae—If a pyosalpinx is present and adhesions are produced between it and adjacent hollow organs, such as the rectum, the intestines, the vagina, the tube or the uterus or even the abdominal wall, these adhesions together with the wall of the pyosalpinx and the adherent organ may become involved by degenerative changes so that they form an opening between the tube and the adjacent organs. In this way the contained septic substances find their way into the surrounding hollow organs and if the walls of these organs are involved by subluxations and obtain a deficient quantity or quality of mental impulses, then they are subject to inflammation which is made active by the presence of septic material. In themselves, these fistulous openings are not dangerous to the life of the patient nor do they materially complicate the disease, but they may give rise to the extension of the septic fluids very rapidly to surrounding organs, which, because their walls are deficient in the expression of mental impulses, may be seriously involved. Particularly is this true if the secondary inflammation results in partial or complete occlusion of any of the excretory channels leading from the body, such as the urethra or the cervix. Serious adhesions also may occur in the intestines, and ultimately intestinal obstructions result from the development of severe inflammation here.

Appendicitis—This condition may result as a secondary incoordination following purulent salpingitis and is usually

due to the adhesion of the appendix with the right oviduct. This condition is not an uncommon one and with the associated primary incoordinations it produces symptoms which are sometimes very difficult to recognize.

The involvement of the appendix is due to the extension of the septic fluids through the intercellular channels of the serous system which extend through the wall of the pyosalpinx, through the adhesions which have been formed between it and the appendix, through the appendix wall and ultimately to the mucous membrane which lines this latter organ. At this time the development of appendicitis depends upon the normality or abnormality of the mucous membrane which lines it. If the nerve fibers supplying this membrane are impinged by subluxations in the upper lumbar region, then it is unable to cope with the toxins which form upon its surface and it becomes involved in inflammation. If, on the other hand, it is normal in every way, then it is able to absorb and throw off the toxins through the serous channels which begin here and terminate in the kidneys and inflammation does not develop. Subluxations at K. P. already exist as is evidenced by the existence by the pyosalpinx, but this subluxation is not necessarily associated with appendicitis unless there are also subluxations which impinge those nerve fibers which supply the walls of the appendix.

Etiology—Subluxations at K. P. and at P. P. Purulent salpingitis as a rule follows as a secondary condition to endometritis either of the gonorrheal or of the septic form. The acute form follows septic endometritis while the chronic form is more often associated as a secondary condition in gonorrheal endometritis. To state that the salpingitis is the result, in either the acute or chronic form of endometritis is erroneous, despite the fact that the former condition as a rule is associated with the latter and follows after it. There is little doubt but that the toxic secretions which are given off from the mucous membrane of the uterus extend up into the tube

and there may be productive, together with subluxations which already exist, of inflammatory changes. There are too many cases, however, where inflammation of the uterus occurs and where there is no secondary involvement of the tubes, to definitely state that the one condition is causative and that no other factor is involved in the cause. There must, of necessity, be impingements on the nerve fibers supplying the walls of the tube in order for it to become susceptible to the activity of the secretions from the uterine mucous membrane. If these impingements do exist and if the mental impulse supply to the wall of the fallopian tube is deficient in quantity or quality, then a lack of resistance is manifest here, which makes the tubal wall susceptible. In this event, the subluxation is the causative factor, and the presence of the excretory materials from the uterus is merely a condition in the course of the disease which makes the inflammation an active one instead of allowing the condition to remain as a dormant abnormality incapable of expressing noticeable symptoms. The degree of impingement determines absolutely the degree of affection which takes place in the tube and in the surrounding structure. If only the mucous membrane of the tube is involved by the subluxation, then only this particular coat becomes involved in inflammation; while if the muscular and the connective tissue coats and the peritoneal membranes are also involved by these subluxations, their resistance is also lowered and they at once become susceptible to the action of the toxins which come in contact with them. Further, the types of nerve fibers which are impinged are intimately concerned in the character of inflammation which exists, it being more severe where the nutritive and reparatory fibers are involved than when only the secretory or the calorific fibers are affected. If only the calorific and secretory fibers are impinged, then the inflammation is a simple one, while if reparatory and nutritive fibers are also involved, the secretion which is formed is purulent in character. The existence of adhesions in any part of the tube

is the result of excessive carolific impulses together with excessive expansion impulses, which gives rise to the formation of new cells, which by sending out branches that intermingle with the branches of other new cells on adjacent membranes are productive of adhesions. The character of the disease is undoubtedly somewhat determined by the character of the excretion which comes in contact with the tubal wall. That of the septic form of endometritis, containing larger quantities of toxins, produces a very severe and acute salpingitis, while the presence of the toxin in the gonorrheal form of endometritis is not so severe and thus the salpingitis is chronic in character. The conditions which are associated with and give rise to many of the symptoms which manifest themselves at the time purulent salpingitis exists are the result of the involvement of the surrounding tissues by the sublaxations which are present in the lumbar region. If these sublaxations are extremely severe and if they impinge nerve fibers passing to adjacent organs, then these adjacent organs are also subject to the activity of the toxins which are given off from the tubes, and the degree of the involvement in the surrounding organs is entirely dependent upon the degree of sublaxation which primarily causes their involvement. If a general peritonitis supervenes upon the rupture of an abscess or following the rupture of a pyosalpinx, it is because the peritoneum is not properly supplied with the mental impulses, which make it capable of carrying away the toxic materials which come in contact with it. If general sepsis occurs, it points to the involvement of a very severe K. P. sublaxation without necessarily indicating any marked degree of sublaxation in the lumbar region, although the lumbar sublaxation must exist even if only in slight degree. The formation of connective tissue walls which serve to cut off an abscess from communication with the surrounding parts, is a very nice example of the intellectual adaptation which Innate displays in caring for abnormalities in the body. If the mental impulse supply to

the connective tissues around the point where an abscess is formed is normal, then Innate is enabled to adapt the tissues in such a way that the purulent materials in the abscess do not find their way into the surrounding tissues and thereby she eliminates the possibility of the extension of the toxic fluids to the surrounding tissues which may be already involved by inflammation, and thus be susceptible to the influence of those toxins. On the other hand, if Innate is not enabled to send one hundred per cent of mental impulses to the tissues surrounding the abscess, then the connective tissue walls are not properly formed and a rupture or an extension through the intercellular canals is probable. As this is true of abscesses, it is also true of the pyosalpinx wherein Innate in some events produces a heavy resisting wall and continues to build new tissue as the pyosalpinx is being produced, while in other cases the wall of the tube becomes very thin, no new tissue is being formed, and the pressure from inside the cyst is very apt to rupture the wall and allow for the escape of toxin to the adjacent organs.

Symptoms—Symptoms of purulent salpingitis may be divided into two groups classed as the acute or chronic form.

Acute Form—The acute form of purulent salpingitis almost invariably results as a secondary condition following the septic endometritis, and this, in turn, is the result of an abortion or labor-producing traumatic conditions in the uterus or in the cervix. It is because the symptoms of the septic endometritis are so intermingled with those of purulent salpingitis, that the latter condition is very often impossible to distinguish. If the symptoms of a septic endometritis, however, suddenly become greatly increased in severity or if peritonitis should unexpectedly intervene, then it is usually indicative of the involvement of the tubes by purulent salpingitis. Although these conditions point to a purulent salpingitis of the acute form, yet it would be incorrect to arrive at an absolute conclusion upon these facts alone, because at the best they are con-

clusions arrived at by inference. In studying these symptoms of the acute form of purulent salpingitis, it is only necessary to refer to the symptoms of septic endometritis as the symptoms in this latter condition are always associated with those of the former.

Chronic Form—While the acute form of the disease is practically always associated with a primary septic endometritis, the chronic form usually follows a gonorrheal endometritis which, in itself, may be primary but is more often secondary to gonorrheal inflammation of the cervix. Occasionally cases of chronic purulent salpingitis are the result of acute cases which have gradually merged into the chronic form. At any rate, the chronic tubal infection is associated with an endometritis and the symptoms of the latter are closely allied with those of the former. It, however, should be remembered that the uterine affection in cases of chronic purulent salpingitis are also chronic and thus the symptoms of the endometritis are not readily confused with those of salpingitis as they are in the acute form.

The most constant and one of the most suggestive symptoms of chronic purulent salpingitis is that of pain, which is due to the inflammatory changes which take place in the walls of the tube and through the distention of these walls by the accumulation of retained secretions. Pain also results from a mechanical pressure which is produced by the cystic enlargement upon the surrounding structures, which causes them to assume abnormal positions and to function while under compression. These pains are rather lancinating in character, due to the fact that the organs are being displaced and forced out of their normal positions. The pains which result from the accumulation of fluids are also lancinating in character, due to the stretching of the walls of the tube. Those pains which are the result of inflammatory changes in the tube are of a burning, throbbing character and result from the overgrowth of tissues and the infiltration of blood into the distended tis-

sues; also to the stretching of the vessel walls; if adhesions have been formed while the pyosalpinx is yet small or before the tube has begun to enlarge, due to the accumulation of pus, and if these adhesions are later broken up by distention of the cyst the pains are of a very sharp lancinating character and the result of tearing of new tissues. Even if the adhesions are not broken up by the rapid distention they may give rise to a great deal of pain due to the fact that they are stretched. Pain may also be the result of either a local or a general peritonitis which is associated particularly with the formation of a pyosalpinx.

The degree of pain is not always dependent upon the character of structural changes which take place, although as a rule these changes vary in proportion to the structural changes which take place. Sometimes the pain is neither lancinating in character nor burning, but is rather of a dull, heavy, dragging sensation due to the increased weight of the oviducts pressing upon and forcing aside the other pelvic organs. Also pain is variable in the same cases at different times, dependent upon the physiological activity, which is existent in the associated organs. Examples of this are shown in the congestion which is present during menstruation, wherein all the organs of the pelvis are made more or less sensitive and susceptible to the altered size and position of the tube. Further, if the rectum is filled with fecal material, then this increased quantity must be accommodated for, and this is done by pressing aside other organs of the pelvis. In many cases the pain is less apparent when the patient assumes the recumbent position and more severe when the upright position is assumed. The pain gradually becomes more severe after the patient has been on her feet for some time, and this is the result of the relaxation of the ligaments supporting the pelvic organs and the congestion of blood which is due to the relaxation in the vessel walls. Exercise or strain, due to any cause, serves to increase the pain, because the muscles of the abdomen and pelvis

contract and this contraction affects the thin walled veins more readily than it does the comparatively thick walled and resistive arteries. Sexual intercourse also serves to congest the vaginal wall and all the generative organs and this serves to increase the pain. As the disease becomes chronic, the pain gradually disappears until finally there may be no manifestation of it whatever, except perhaps at the menstrual periods, when the excessive congestion produces it. Although the pain is usually centered in the region of the involved oviduct, it may radiate from here through all the parts of the pelvis or into the thighs. It is the centering of this pain upon one or both sides that determines which oviduct is involved or if they both are. Pain is apt to be more extensive where adhesions have been formed than where this abnormality does not exist.

Although painful menstruation is a symptom of the disease, it is not necessarily distinctive and it does not vary, dependent upon the extent of the incoordination. The pain begins, as a rule, about one week before the flow is manifest and it usually continues for several days after it has ceased. This pain radiates either from the uterus or from the tubes and becomes more or less general throughout the entire pelvis and even into the thighs. It is not distinctive because painful menstruation is a symptom of many incoordinations and it cannot be said to specifically designate any of them.

The general congestion, which is existent throughout the entire pelvis, gives rise to a menorrhagia which lengthens the menstrual periods to as much as eight or ten days and correspondingly decreases the inter-menstrual period.

It is seldom that patients suffering from purulent salpingitis in the chronic form become pregnant. The sterility is due to the overgrowth of the connective and muscular tissues of the ovary, which serves to suppress the Graafian follicles to such a degree that they are unable to rupture and discharge their ova; consequently, these ova cannot become impreg-

nated. Furthermore, chronic involvement of the fallopian tube is destructive to the mucous membrane and the epithelial cells lining this passage so that they cannot perform their function in propelling the ovum from the distal to the proximal extremity of the tube, where it is discharged into the uterus and becomes impregnated. Ectopic gestation sometimes occurs, despite the fact that the ciliated epithelium is destroyed; this, because the spermatozoon finds its way from the uterus through the tube and empties into the ovarian bursa where it comes in contact with the discharged ovum.

The intense pain and suffering of the patient is very apt to produce an effect upon the general health and the slow absorption of the toxic materials which are given off from the inflamed surface serves to utilize much of the vitality of the body in neutralizing their effects. For these reasons general debility, together with loss of flesh and ultimately an extreme nervous exhaustion may occur. Disturbances of the digestive system are common and patients are frequently subjected to indigestion and loss of appetite and constipation.

Intermittent attacks of local peritonitis are common in any of the stages of chronic purulent salpingitis and between these attacks the patient may be almost entirely free from local symptoms of any kind. On the other hand, the symptoms of the chronic form of the disease may continue, although somewhat lessened in character, and the individual be thus incapacitated for the ordinary routine duties of life. These intermittent attacks of peritonitis, however, are more apt to occur in the early stages of the disease than in the later stages, because in the former the adhesions are not so firm and there is less difficulty in their being separated by pressure. In the old cases of pyosalpinx, however, the septic materials are usually completely walled off from the peritoneum and as these walls are formed of heavy connective tissue, the danger of rupture and discharge of the toxins into the peritoneal cavity is improbable. In the later stages of the disease when

perforation does occur into the peritoneal cavity, it is usually the result of undue violence:

These attacks of acute purulent salpingitis during the course of the chronic disease are characterized by an increase in the pain and tenderness of the pelvic region together with an increase in the temperature and the pulse rate. This increase in the temperature and the pulse rate is not particularly marked as a rule, temperature extending as high as 101 and the pulse seldom in excess of 110. The entire pelvis, however, is tender to the touch and this tenderness may even extend into the abdominal region. Of course, if a general peritonitis supervenes instead of the localized form, then the temperature is more markedly increased with a very rapid pulse and with an extreme tenderness.

Occasionally a hydrosalpinx which has resulted from a former pyosalpinx having lost its toxic elements becomes laden with toxins having found their way from the uterus or from some adjacent organs and thus the sterile fluid with which it is filled is made active and a pyosalpinx again intervenes.

Prognosis—The prognosis of purulent salpingitis in either the acute or chronic form is favorable. It is purely a question of relieving the impingements by adjusting the subluxated vertebra in the lumbar region and at K. P., after which reparatory impulses find their way in normal quantities to the tissues involved; ultimately normality in those tissues is the result. Of course, there is a variation in the pathological changes which produce the different forms of purulent salpingitis and it must also be remembered that not all of the acute inflammations or of the chronic inflammations pursue the same course; some of them produce adhesions at the proximal and distal extremities of the tubes, while others do not produce these adhesions and, as a consequence, in the former instance there are formed the hydrosalpinx, the pyosalpinx, the physosalpinx or the haematosalpinx, each of which gives rise to cer-

tain distinctive symptoms. Further, the pathological changes which occur in each are varied, and the time occupied in breaking down adhesions which have been formed or disintegrating and absorbing tissues, which are the result of overgrowth of the connective tissue in the tubal wall, varies in proportion with the amount of tissue which has been formed and the character of that tissue. If there are large quantities of new connective tissue cells they require a greater length of time for their destruction, while if epithelial cells are in excess a shorter length of time is required to tear them down and replace them by new cells. Furthermore, it must be remembered that there are the accidental ruptures of the retained cysts to be reckoned with and if these ruptures involve large areas of tissue, then greater reparation must be effected before complete health returns. If severe tubal infection has destroyed the epithelial tissue cells and replaced those epithelial cells by connective tissue cells, then the restoration of normality in the lining membrane can never be affected, because the centers from which the cells are developed are entirely absent. Although this is true it is not necessarily true that the individual may not be restored to a degree of normality where she may carry on the ordinary duties of life without undue discomfort.

CHAPTER VII

DISEASES OF THE OVARIES

Acute Ovaritis

Definition—An incoordination of the ovaries characterized by acute inflammation and, as a rule, associated with purulent salpingitis.

Etiology—Subluxations at K. P. and at P. P. The impingement of nerve fibers leading to the ovary give rise to structural changes in that organ, characterized by swelling and oedema and the escape of fluids to the outer surface of the organ. As a rule, the disease follows either a septic purulent salpingitis or a gonorrheal purulent salpingitis which, in turn, are the result of subluxations in the middle lumbar region and are preceded by one of the severe forms of endometritis. The fact that this form of ovaritis is associated with and is usually secondary to the purulent salpingitis has led to the belief among medical men that the salpingitis is the cause and that ovaritis is the result. This, however, we cannot concede, because of the great number of patients on record where salpingitis exists and where ovaritis is not present. There must be present impingement of those fibers which pass to and supply the tissues of the ovary with mental impulses before this organ can possibly be involved by inflammatory changes. The degree of inflammation which occurs is directly proportional to the degree of impingement which takes place upon those fibers which supply the ovaries and form the character of the fibers which are impinged. If only calorific fibers are involved, and secretory fibers, and the inflammation is a simple one, then the

symptoms are correspondingly mild. If, on the other hand, the impingements are upon nutritive, reparatory and expansion fibers, as well as upon those already mentioned, the inflammation is a severe one and the symptoms are correspondingly severe. The disease is more apt to occur in association with septic changes in the tube or in the uterus and in those cases where gonorrhea exists. This because of the fact that the toxic materials which are given off in septic inflammation are more harmful than those which are given off in the gonorrheal inflammation, and thus it is that a greater degree of abnormality in the cases of the ovary is necessary in order that the ovaries may become involved with inflammatory changes in the latter form. Occasionally, acute ovaritis is associated with septic endometritis or with gonorrheal endometritis without the fallopian tubes being involved in any way. If this is true, it is because the toxins are carried through the fallopian tubes to the ovaries and the ovarian tissue is subject to their effect, being involved by a lack of mental impulses while the tubes are normal in every way and are capable of withstanding the action of the toxic material. If the inflammatory process is extensive, small sacs of pus are found throughout the entire structure of the ovary, usually located in the stroma of the organ and as the intervening tissues between these pus sacs are broken down there is ultimately formed a single large abscess. In the less severe types of the disease, these sacs of pus are not formed and the inflammation gradually disappears. This is because the nerve fibers which originally are involved and which allow for the primary affection of the organ by inflammation become released and as the result of this release normality is again established in the organ and it is capable of throwing off the toxic fluids which come in contact with the tissues. Then, again, if normality is properly restored by the reduction of pressure upon the nerve fibers supplying the ovary, the severe forms of inflammation do not develop, but the condition remains as

a mild chronic incoordination. If a large ovarian abscess is formed there is pressure produced which tends to perforate the wall and allow for the escape of the contained pus to the peritoneal cavity. It is here that the degree of impingements on the nerve fibers plays an important part in determining the final outcome of the disease. If those fibers supplying the capsule of the abscess are not impinged, then that capsule is made strong, thick and heavy and is capable of withstanding the pressure from the inside of the cyst. In other words, intellectual adaptation occurs, so that toxic materials resulting from the inflammation are confined within comparatively narrow limits and are not allowed to come in contact with the peritoneal membrane to produce either a local or a general peritonitis. The peritoneum would not, necessarily, become involved with severe inflammatory changes, even though rupture of the abscesses did occur, because if the nerve supply to it was normal it would be capable of withstanding the effect of these toxins, absorbing them and throwing them into the serous channels, from which they would ultimately be eliminated from the body.

In some events, the active inflammation which primarily exists in the ovary and which is productive of the formation of pus, is decreased in severity so that pus is no longer manufactured by cells lining the abscess and the pus which is already present undergoes degenerative changes, so that the solid materials are thrown down and the fluid which remains is simple in character. Then, again, an old abscess which has become simple in character may again become active, due to the further impingement of nerve fibers supplying the cells lining the cyst and as a result the abscess again takes on the character of the more severe form. If large quantities of purulent excretion find their way through the serous channels to the surface of the ovary and if the capsule is involved with a lack of nutritive impulses and an excess of expansion and calorific impulses, adhesions are very apt to occur between

the ovary and the structures which closely surround it. Adhesions are more apt to occur in the gonorrheal form of the disease than in the septic form.

Symptoms—In the great majority of cases where the acute ovaritis is associated with endometritis or salpingitis of the severe forms, the symptoms of these latter diseases are so much more severe than those of the ovaritis that they overshadow those of the latter conditions to such a degree that they are indistinguishable. In other words, where these conditions are associated with symptoms of the puerperal or gonorrheal forms of endometritis, the symptoms of the latter condition are all that can be definitely distinguished and thus they are also the symptoms of the ovaritis. In those cases, however, where the acute ovaritis exists without being associated with endometritis or salpingitis, the symptoms of the inflammation in the ovary are distinctive and may be separately considered.

Pain is one of the distinctive symptoms and it is centered in the iliac region and of that ovary which is involved or in both ovaries if they are both involved, and it radiates from here to all parts of the pelvis and perhaps into the thighs. There is also an increased temperature and an increase in the pulse rate, although this increase is not so marked as where the inflammation is more extensive. The pain which is present is usually lancinating or burning in character and very acute, with occasionally heavy dull pains in the lumbo-sacral region, particularly if an abscess is formed in the ovary which markedly increases its size. In some cases there are the associated symptoms of nausea and vomiting. In order to relieve the pain and the tension in the iliac region, which is made more severe by the compression of the abdominal wall, the patient is apt to assume the same position as is assumed in appendicitis with the thigh on the affected side being flexed and the knee drawn up sometimes as far as the breast. There is, occasionally, involvement of the parotid gland, if the inflam-

mation is particularly severe, and this establishes the contention which has been held for some time that there is a direct communication between the ovaries and this salivary gland by way of serous channels, the courses of which have not as yet been fully established.

Prognosis—The prognosis is favorable, dependent upon the release of pressure on the nerve fibers which, by their impingement, are productive of the disease. In no wise is the prognosis of the acute ovaritis dependent or associated with the prognosis of the primary conditions of a salpingitis or an endometritis. If the tissues of the ovary are made normal in their function by the release of pressure on those fibers which supply the tissues, then they are capable of withstanding the effects of the toxins which come in contact with them and thereby they retain their normality. In those cases which, of their own accord assume the normal condition, it is the result of the restoration of the normal impulse supply due to the reduction of the subluxation by accidental means. This, however, is more apt to occur in the mild forms of the disease than in the severe forms, because in the severe forms the vertebra is out of alignment to such a degree that the ordinary concussions from the external are not sufficient to return it to its normal state.

Chronic Ovaritis

Definition—An incoordination characterized by inflammatory changes occurring in the ovaries, which pursue a more or less chronic course.

Etiology—Subluxations at K. P. and P. P. This disease is more common than the acute form because of the fact that subluxations of slight degree are more easily produced than those which are more severe. Furthermore, this form of the disease is more often met with during the child bearing period of a woman's life than at other times, for the reason that the severe muscular manifestations which occur during labor

are apt to produce subluxations which are productive of inflammatory changes. These subluxations are not apt to be severe and it is for this reason that the inflammation is chronic in form rather than being of the acute type. Also, there is not the associated condition here of excessive amounts of toxic material to be excreted and to irritate the tissues of the ovary that are present in the acute form. Occasionally this form of ovaritis is present with gonorrheal endometritis or with a purulent salpingitis associated with gonorrhea, but in these forms the gonorrhea is of a mild form and essentially chronic in character, so that the toxins which are produced are not vital factors, together with the subluxation existing in producing the incoordination. Sometimes, too, acute forms of ovaritis merge into the chronic forms because of the release in part of the pressure on those nerve fibers which are productive of the original disease. In the great majority of cases of chronic ovaritis they are congestive in form and the symptoms are manifest very slowly because of the progressive involvement of those veins which by their obstruction produce the congestion. In these events the disease is directly the result of a primary disease which decreases the size of the lumen of the veins which drain the ovary. Although in these cases there is not necessarily any involvement of the nerve fibers supplying the ovary itself, still the incoordination is directly the result of nerve impingements which produce structural change in other tissues of the pelvis or abdomen. Particularly do tumors of the pelvis produce pressure upon the drainage vein and dam back blood in the affected organ, so that congestive inflammations results. This damming back of the blood gives rise to distention of the capillaries and the smaller arterioles and venules and through the walls of these vessels there escape quantities of fluid into the surrounding tissues, thus producing swelling. Also, the excessive quantities of blood being present in organs give rise to excessive oxidation and this, in itself, produces excessive heat. Besides tumor of the pelvis there are

displacements of the uterus and other abdominal organs which press upon the drainage veins, thus producing the same effects.

Ordinarily the disease is bilateral and is due to the impingement of nerve fibers emitting from both sides of the spine. This impingement is ordinarily the result of a single subluxation, although it may be the result of more than one. Occasionally in cases of chronic ovaritis, cysts are formed in the substance of the organ, due to the thickening and overgrowth of the connective tissues, which constitute the capsule. This thickening or overgrowth is directly the result of excessive expansion impulses being supplied to the capsule and when this condition exists it does not permit of the rupturing of the Graafian follicles and the consequent escape of the ovum and the serum through the wall. At first only a small cyst is formed, but as time progresses more Graafian follicles mature and upon their failure to rupture they more completely fill the cavity of the ovary. Eventually a degree is reached where the intercellular materials between these several cysts are ruptured and thus a single large cyst is produced. Until that time, however, the surface of the ovary is studded with many minute cysts which give to the surface a very irregular contour. These cysts may contain blood at times, if the congestion is so marked that a rupture of the vessels of the ovary is produced. The size of these minute blood cysts is dependent upon the size of the vessel which is ruptured and also upon the character of that vessel. If it is a large blood vessel and if the rupture is large, naturally a greater quantity of blood escapes into the surrounding tissues; again, if an artery is involved by a rupture in its wall, the cyst is larger than if a vein is ruptured, because the pressure in the artery is greater and the blood continues to escape until equilibrium is established between the blood in the cyst and that in the artery. On the other hand, where a vein is ruptured, a less amount of blood escapes before this point of equilibrium is established and, as a consequence, the haematoma is small. If the nerve

fibers supplying the connective tissues of the ovary, which constitute the stroma, are affected, there is an overgrowth of these connective tissues which ultimately manifests itself in the form of a cirrhosis. These connective tissues ultimately contract and the ovary becomes a small, hard mass which is completely surrounded by adhesions, because, in contracting, the fluids have been squeezed out to the surface of the ovary where they have undergone organization and produced firm connections with the surrounding peritoneum.

Symptoms—The symptoms of chronic ovaritis may be associated with symptoms of other diseases or they may be entirely independent; if associated with the symptoms of endometritis or salpingitis, or with those of tumors of the pelvis, one must be careful not to confuse the two sets of symptoms. They are not associated with the symptoms of the acute form of endometritis and salpingitis, however, and thus a distinction can be made between them and the associated conditions much more readily than in the acute form of ovaritis, where the symptoms of the disease are entirely overshadowed by the symptoms of the much more extensive associated conditions.

Pain is the most distinctive and the most constant symptom of chronic ovaritis and is situated on one or both sides in the iliac region, dependent upon which ovary is involved or if they are both involved. This pain radiates from the ovary into the surrounding organs, such as the rectum, bladder, uterus and into the lumbo-sacral regions or the thighs and the degree of pain is dependent upon the degree of the inflammation and the severity of the adhesions which are formed. As in most cases, however, of pelvic congestion, this pain is increased during the menstrual period, beginning a few days before the actual flow and lasting a few days after its cessation. If the menstrual flow is large in quantity, the pain is lessened in degree, due to the decrease of vascular pressure in the pelvis, while if it is scanty the pain is increased because of the increase in the congestion. Also this pain is dependent

upon the activity of the patient being more severe while she is in the erect position, while less severe if she assumes a recumbent position. This because in the erect position the supporting ligaments of the uterus and its appendages allow for these organs to assume a lower position of the pelvis and thus produce greater pressure upon the drainage veins of all the pelvic organs. The ligaments become stretched and in part lose their tonicity because they are affected by the same subluxations which are productive of the ovarian inflammation, the only difference here is that a different set of fibers are impinged and that instead of those fibers which, by their impingement produce inflammation, being affected, the motor fibers are affected and by their involvement the ligaments of the pelvis lose, in part, their tonicity. Temporarily, the pain is increased by strain, resulting from defecation, urination, or sexual intercourse because in these physiological activities the diaphragm descends and compresses all the abdominal viscera, but more particularly does this pressure affect the veins, thus congesting the blood in the capillaries of the pelvis. The veins are more readily affected than the arteries because they are composed of comparatively thin walls, while the arteries possess walls which are heavy and resisting in character.

Menorrhagia and metrorrhagia are not uncommon symptoms of chronic ovaritis and they are the result of compression upon the veins draining the uterus, by cysts being formed in the involved ovaries. In cirrhotic cases where the capsule of the ovary has become thickened, together with the stroma, the function of the ovary is destroyed and amenorrhea is apt to manifest itself as a symptom. The reason for this is that menstruation is an adaptative process, physiological in character, which Innate produces during the productive period of a woman's life, and when the possibility of the manufacture and discharge of the ova is no longer present, there is no longer the necessity for the occurrence of menstruation. Thus

it is that Innate does away with the periodical loss of blood and thus conserves the vitality of the individual. It is true that where cysts of the ovary are formed the capsule is also thickened and there is no longer the necessity for menstruation, but here a pseudo menstruation occurs because of the congestion produced by the partial occlusion of the veins draining the uterus. In chronic ovaritis, sterility is the result of thickening of the capsule of the ovary which serves to retain the essential ova within the organ where it is manufactured.

There is a general weakness and emaciation which are due to gastro-intestinal symptoms characterized by loss of appetite, with sometimes nausea and vomiting and with constipation. This general debility gives rise to a general lack of vitality in the patient and ultimately nervous exhaustion and mental depression are apt to manifest themselves.

Prognosis—The prognosis under adjustment is favorable and the length of time required in arriving at satisfactory results is entirely dependent upon the length of time required in correcting the subluxations and in producing the restorative processes in the involved tissues. Although not so severe in form as acute ovaritis and not so apt to result fatally as the more severe incoordination, still there are cases which may prove extremely dangerous to the life of the patient if proper adjustments are not given early in the disease. Those cases which prove dangerous are the ones where suppurative inflammation takes place and abscesses are formed in the ovary which, by their rupturing, tend to produce destructive and extensive inflammation in the peritoneum. This can only occur where those nerve fibers supplying the peritoneum are impinged and produce, together with the toxins given off from the abscess, severe inflammation. In brief, the severity of the complication is the result of marked subluxations in the lumbar region and these subluxations should be corrected in order to avoid the general septic conditions which are apt to follow.

Prolapse of the Ovary

Definition—An incoordination in the pelvic tissues wherein the ovary assumes a position in the pelvis lower than the normal, due to the lack of motor impulses being properly supplied to the supporting structure, or to other allied conditions.

Etiology—Subluxations at P. P. with the possibility of associated subluxations in the lower dorsal region. Prolapse of the ovary may be considered of a primary or a secondary condition and it will be so considered here.

The disease is said to be secondary when the ovary is displaced downward, due to a retrodisplacement of the uterus or to some abnormality of the tube which causes it to drag down on the ovary and pull to a lower position. Prolapse may also be due to the contraction of adhesions which form during ovaritis or during the purulent salpingitis, particularly when these conditions are present in conjunction with a local peritonitis. Further, any tumor in the pelvis, which is situated above the ovary, and in some cases even tumors in the abdominal region serve to press downward on the ovary and to make it assume a lower position than the normal. Prolapse of the uterus, associated with subinvolution or inversion of the uterus, if it is extensive, serves to pull down on the broad ligaments and thus produce traction on the ovary, pulling it to the inferior. It can readily be seen that although the prolapse of the ovary is not directly due to impingement on the nerve fibers supplying it or its supporting ligaments, involving them with lack of tonicity, still the condition is one which results from nerve impingements on fibers leading to adjacent organs and compelling them to undergo changes which directly affect the ovary.

Primary prolapse of the ovary is a condition wherein the organ assumes a lower position in the pelvis without being associated in any way with abnormality in other organs. Any marked increase in the size of the ovary which materially in-

creases its weight, serves to make it assume a lower position in the pelvis. Very often this increase in the weight of the ovary is associated with a lack of motor impulses being supplied to the ligaments which support it, and the two conditions together are the cause of the disease; particularly is this true in the congestion and hypertrophy which occurs during pregnancy and in sub-involution which manifests itself very often following a labor or abortion. Here it is true that the ovaries are abnormally heavy but at the same time if mental impulses are supplied in proper quantities and if in proper quality to the supporting structures, they are amply able to take care of the increased weight and to keep the ovary in its normal position. It is only when the ligaments are not properly supplied and, as a consequence, lose their tonicity that the ovaries become prolapsed in this condition. A chronic ovaritis if associated with development of a large cyst is very often associated with prolapse and is the result of increased weight which the supporting ligaments are called upon to support. Occasionally, where patients are suffering with general debility due to a lack of proper assimilation, all the tissues of the body become soft and flabby and lack their normal tonicity. In this event, the same condition which exists in muscular tissue and in all other tissues of the body exists also in the supporting structures of the ovary and, as a consequence, prolapse of either organ occurs. Here we have the causative factor, not as a subluxation in the lumbar region, but rather in the middle and lower dorsal regions, which subluxations produce deficiency in the ability of the absorbing cells of the intestine to take from the food products those materials which will be needed in the body to maintain at the normal the general tissue strength. On the other hand, these subluxations in the middle dorsal regions may affect the secretory cells, which, under the control of Innate produce the digestive secretions and thus the substances which are used in the body are never properly formed in the intestine. Any form of tumor existing on the ovary,

whether of the benign or malignant forms, serves to materially increase the weight of that organ and predispose to prolapse.

The ovary on the left side of the body is more subject to prolapse than that on the right side, for the reason that the vein draining the left ovary does not possess a valve and consequently a passive congestion of this ovary more frequently occurs than on the right side. Also the rectum lies on the left side of the body so that if it becomes filled with fecal material it serves to compress the veins draining the left ovary more readily than those draining the right. Again, the left ovary being more subject to congestion than that on the right side, it becomes heavier and more markedly enlarged during pregnancy and, as a consequence, if sub-involution occurs in the ovaries, the left one remains more greatly enlarged than does the right.

Symptoms—The symptoms of prolapse of the ovary are very often associated with those of sub-involution or chronic ovaritis and it is sometimes very difficult to distinguish the symptoms of these two associated conditions.

In prolapse the most constant symptom and the most distinctive is that of pain, which is greatly relieved when the patient assumes the recumbent position, while it is markedly increased when she assumes the upright position; also the pain is increased during the various forms of exertion, such as coition, defecation, micturition and in the more mild forms of exercise, such as walking, etc. Prolapse of the ovary may produce marked congestion in the organ so that it becomes very tender to pressure and occasionally this tenderness is so marked that intercourse is impossible. This pain is centered in the iliac region of the side which is involved and usually radiates to the other organs of the pelvis, to the lumbo-sacral region or into the thighs. This pain is variable in character, being in some cases sharp and lancinating, while in other cases it is merely a dull heavy ache. In the former condition, nausea and sometimes vomiting are associated.

The menstrual flow is usually increased in amount although sometimes it is extremely painful. This increase in the menstrual flow is due to the partial occlusion which occurs in the veins draining the uterus, which, in turn, is produced by the pressure against them of the enlarged and displaced ovary. On the other hand, if the ovary is displaced to such a degree that it presses against the cervix of the uterus, it serves to decrease the lumen of this canal and to prevent a free discharge of blood into the vaginal canal. At the menstrual periods also, the pelvic pain which is present at all times in the disease is increased, and is the result of the increase in congestion which occurs at this time in all the pelvic organs, but which is particularly noticeable in the involved ovary. Occasionally general symptoms of indigestion and constipation are noted and as a result of these symptoms the patient often becomes emaciated and debilitated.

Prognosis—The prognosis for prolapse of the ovary is favorable, but the length of time required to correct the condition is dependent upon the associated abnormality. If it is a primary prolapse, due to the formation of tumors in the organ, a greater length of time is required to restore normality to the part than as if it is entirely the result of the lack of motor impulses in the supporting ligaments. If it is a lack of motor impulses in those organs which support the ovary, normality will be restored immediately upon the restoration of the vertebrae to their normal position. On the other hand, if the prolapse is associated with an ovarian tumor, it may be some time after the correction of the subluxation before Innate has had time to tear down the excessive materials which have been formed and to replace them with normal ovarian tissue.

Hernia

Definition—An incoordination characterized by a relaxa-

tion of the supporting tissues of the ovary which allows it to assume an abnormal position manifest by a protruding mass.

Etiology—Subluxation at P. P. In this disease there is a lack of motor impulses being supplied to the ligaments which support the ovary and usually a lack of impulses to the tissues which form the inguinal canal, thus permitting the former to allow the ovary to descend to a position much lower than the normal and for the latter to dilate and permit the ovary to pass through its lumen. The disease is usually unilateral and the tumor which is apparent in the labia majora is variable in size, dependent upon whether the ovary alone is displaced or whether the tube and the omentum also have found their way through the canal of Nuck and into the dilated sac. If the ovary alone is present, the enlargement is hard and rather almond shaped, while if the other structures are present, it is usually large upon one side and soft and boggy on the other. Even though the ovary is in the abnormal position, it usually carries on its normal function and ovulation continues, but the ova seldom find their way through the Fallopian tube and into the uterus. The size of the hernia is also dependent upon the condition in which the ovarian vein finds itself when the ovary assumes its abnormal position. If it is twisted, there is apt to be a partial occlusion which serves to produce a passive congestion and a consequent enlargement of the organ. Occasionally the ovary becomes displaced so that it projects through the obturator foramen, through the femoral opening or through the umbilical canal. None of these latter conditions, however, are as common as prolapse through the inguinal canal.

Symptoms—Occasionally the only symptoms present are mechanical ones which are the result of the hernia itself, affected by the protrusion of the ovary through one of the several openings which have been named. More often, however, the mass becomes swollen and congested and is very tender, particularly at the menstrual periods, when the patient suffers

great discomfort and pain. If inflammation takes place in the hernia, or if it becomes cystic, due to the infiltration of fluid, then pain is a constant symptom which displays exacerbations at the menstrual period. When inflammation or cysts do occur, it is the result of compression which affects the drainage veins, but which does not affect the arteries which supply the ovary, or whatever other tissues may be contained within the protruding mass. This, for the reason that the veins are soft and easily compressed while the arteries are hard, resistive structures which are not so easily subjected to ordinary external pressure. If the nerves of nutrition and reparation are impinged, suppuration occurs in the hernia and the characteristic symptoms of localized abscess are present. Sometimes the subluxation may exist for a long period of time without affecting anything except the motor fibers which supply those organs which protrude into the hernia and at a later period a greater degree develops in the subluxation which involves the additional fibers so that new pathological conditions supervene. It is notable that when pressure is made upon a hernial mass which contains the ovary, nausea and faintness affect the patient, while this is not true if the uterus is found in the hernia or if other abdominal viscera are found here.

Prognosis—The prognosis is favorable dependent upon the length of time required to replace the displaced vertebra to its normal position and for Innate to readjust the tissues to their normal tonicity. Naturally, in cases of long standing, the length of time required to affect these changes is greater than in the acute form.

Hemorrhage of the Ovary

Definition—An incoordination existing in the ovary which allows for a rupture in one or more of the vessel walls and the escape of blood to the surrounding tissue.

Etiology—Subluxations at K. P. and at P. P. or a subluxa-

tion at P. P. alone. If a subluxation exists which produces a lack of tonicity in the blood vessel walls then excessive congestion, due to excessive physiological activities, may together with the subluxation give rise to hemorrhage. Particularly is this true if the congestion is induced by sexual excess, coitus during menstruation or masturbation. Also pelvic or abdominal tumors which serve by their rapid growth to displace the blood vessels of the ovary, may by their presence, produce lesions in those vessels, thus allowing for hemorrhage. If adhesions have been formed, due to inflammatory changes, and if these adhesions are separated by excessive exertion or undue manipulation, they leave raw and bleeding surfaces and allow for the escape of small or large quantities of blood. Subluxations affecting motor nerves passing to those organs which supply the supporting structures of the uterus, may, by their involvement, give rise to a uterine displacement, which in turn, produces pressure upon the veins draining the ovary, and this serves to congest the blood in the ovarian vessels. Thus, in this condition, any undue exertion may be marked by a loss of blood. Any disease of the heart or lungs or of the liver or kidneys, which serves to increase the general blood pressure of the body produces excessive pressure in all these vessels and if a local subluxation exists at P. P., there is a weakening of the vessel walls in this organ, which, together with the increased pressure, also due directly to subluxations serves to produce hemorrhage.

Naturally, any of the inflammations of the ovary, and particularly that type which is associated with puerperal sepsis, may give rise to an extreme congestion which is productive of hemorrhage.

Hemorrhage of the uterus is divided into two divisions, so classified from the tissues which are involved in the hemorrhage. If the escape takes place into the Graafian follicles the disease is known as follicular hemorrhage; while if it takes place into the stroma of the organ, it is known as ovarian

apoplexy. Naturally the character of the hemorrhage and its classification depends upon the tissues which are involved by the causative subluxation. If it is the blood vessels which lie in the wall of the follicle, then it is a follicular hemorrhage, while if the nerve fibers which are impinged are those which supply the blood vessels leading to the stroma, it is known as ovarian apoplexy. Follicular hemorrhage is more common than the variety that occurs in the stroma of the organ, because the blood vessels of the follicle are not so closely surrounded by connective tissue and, as a consequence, are not possessed of walls which are as resisting as those found in the latter tissue. This distention of blood in the follicle varies in size from that of a pin head to that of a small orange, and is dependent upon the size of the vessel involved in the rupture and upon the character of that vessel. If an artery is involved, the tumor is larger than if a vein is involved; this because of the fact that the arterial pressure is greater than venous pressure and a greater quantity of blood escapes from the artery before a point of equilibrium has been established between the arterial and the cystic pressure than if a vein is involved. It may be that only one follicle is affected by the hemorrhage, or it may be that several hemorrhages occur in different follicles, thus producing a beaded or studded appearance on the surface of the organ. These elevations are small and rounded and of a dark reddish color, due to the accumulation in them of blood which has become stagnant. This condition may remain as in its inception, or the various follicles which have been formed may coalesce and form one single large tumor. Usually, however, Innate is capable of producing adaptation in the organ to such a degree that the ruptured vessel becomes healed and the blood in the cyst becomes absorbed. If, however, the adaptative process does not take place and the blood remains, the fluid part of it becomes absorbed and that which remains is more or less tarry in consistency and of a very deep red color. In other cases the solid portions of the con-

tained substances may be thrown down from the solution and absorbed by the wall of the cyst, leaving only the fluid elements which constitute a serous cyst rather than a haematoma. If, during the course of a haematoma the reparatory nutritive impulses become deficient in quantity, and if the calorific impulses are made to express themselves in excess, then suppuration is apt to occur and ovarian abscess result. This ovarian abscess may rupture and if the toxins which it contains come in contact with the peritoneum and if the tissues of this peritoneum are involved in a lack of impulses which gives to them normal resistive powers, general or local peritonitis is apt to manifest itself.

In ovarian apoplexy the amount of blood which makes its escape into the stroma of the organ varies, dependent upon the size of the vessel involved and upon the character of that vessel, as in the case of the follicular variety. It may be a primary condition due to the relaxation of the blood vessel walls which supply the stroma or it may be due to primary involvement of the follicles and the seepage of blood through the intercellular channels of the stroma. In this latter condition the ovarian apoplexy is known as a secondary incoordination. Ovarian apoplexy involves a multiplicity of minute haematomata and usually if a section is made through the substance of the organ, minute particles of blood may be distinguished.

Occasionally large hemorrhages take place in the stroma and the escaping blood lodges itself in one or more large spaces. In these cases, although they are rare, the haematoma which is formed may attain as great a size as that attained by the follicular variety of the disease. Ultimately the contained substances may undergo the same changes which they undergo in the follicular form, the entire substance being absorbed or the solid substances alone, or the fluid substances alone. Occasionally such a high pressure is produced that, with the associated pathological conditions, a rupture is forced

through the capsule of the ovary, allowing the blood to escape either between the layers of the broad ligaments, or, if the peritoneum is also perforated, into the peritoneal cavity.

Symptoms—The symptoms in either of these forms depend entirely upon the degree of extravasation and this degree, in turn, depends upon the degree of abnormality in the nerve fibers supplying the ovary and the associated pathological condition. The character and extent of pain depends upon the size of the haematoma which is formed and if a severe hemorrhage takes place and ultimate perforation into the peritoneal cavity, then the symptoms of shock are apt to manifest themselves. If the haematoma becomes changed by supuration into an ovarian abscess, the symptoms of ovarian abscess are the only distinctive features and the patient will note an increase in the bodily temperature and in the pulse rate.

Prognosis—The prognosis is favorable with the time element always considered and with a sufficient period allowed for Innate to produce intellectual adaptation to such a degree that the contained fluids will be absorbed into the serous channels of the body. It is so often that ovarian hemorrhage is associated with some other pathological condition that this associated condition must be taken into consideration in offering a prognosis. It is true that a local subluxation at P. P. must be present in order for a weakening to occur in the vessel walls, but it is likewise true that this weakening in the vessel walls results in a hemorrhage from undue pressure which, in turn, may result from an abnormal condition entirely outside the substance of the ovary. In the etiology we have named several conditions which are associated with ovarian hemorrhage, and the correction of the subluxations which produce these abnormalities is as important in the correction of the secondary condition as the adjusting of those subluxations which lead to an involvement of the ovarian vessels.

Hydrocele

Definition—An incoordination characterized by the accumulation of serum between the fimbriated extremities of the Fallopian tube and the surrounding peritoneum.

Etiology—Subluxations at K. P. and P. P. These subluxations are productive of the expression of excessive quantities of secretory impulses and of expansion impulses. The former serve to produce excessive quantities of fluid which cannot make their escape from the cavity into which they are thrown, while the latter serves to occlude the opening through the Fallopian tube and into the uterus, thus preventing the escape of the fluid which is manufactured. The cyst which is formed in the hydrocele is bounded by the open end of the Fallopian tube and perhaps by the wall forming the distal extremity of the tube, together with the peritoneum which constitutes the sac in which the ovary lies. All of the sac may be included in the formation of the wall of the cyst, or only a comparatively small part of it and upon the amount of wall space which is formed by the peritoneum depends the extent to which the ovary projects into the cyst. If a large part of the wall is formed by the peritoneum, then the ovary projects into the cyst to a marked degree, while if only a small part of its wall is so formed, the ovary itself constitutes a part of the wall and serves to limit the fluids which are contained. These ovarian hydroceles are variable in size from microscopic dimensions to the size of a child's head. Occasionally, the occlusion of the Fallopian tube is not complete and it allows for the escape of the contained serum through its lumen and into the uterine canal at intermittent periods. More often, however, the occlusion is complete and there is no escape of the serum into the uterine cavity.

Care must be taken that hydrocele is not confused with the tubal ovarian cyst which is so often present with inflammation of the Fallopian tube; in the former the wall of the

cyst is formed in part by the tube itself and the fimbriated extremity of the tube projects into the cavity of the cyst. This forms a true opening from the tube into the cyst, while in the latter case the opening which is formed is always a false opening which has been produced by rupture of the wall of the tube which usually follows an ulceration. In this event, the fimbriated extremities do not project and are not found in the cyst. In hydrocele of the ovary various secondary changes may occur as in other forms of cysts in other locations, particularly is inflammation apt to occur and if suppuration manifests itself, the simple hydrocele may become, in fact, an abscess and following the formation of this abscess all of the resultant associated conditions.

Symptoms—The symptoms of this particular disease are not distinctive, as they are the same as other ovarian tumors.

One of the principal symptoms is that of an enlargement which gives rise to various types of pain and of varying degrees of severity. If the tumor is large, pains are correspondingly severe and as a result of displacement of the surrounding organs with which the cyst comes in contact. Displacement may be produced which affects the uterus, the ovary, the rectum or the bladder with the associated symptoms of displacement of these organs. In some cases it is severe in character and is dependent upon the degree of distention and the rapidity with which this distention occurs. If it is extremely rapid the pain is more severe and is lancinating in character, while if the enlargement is small and if it progresses slowly, the only unusual symptoms are those of bearing down in the pelvic region and a dull lumbo-sacral ache. This pain radiates from the involved tissue to all parts of the pelvis and sometimes down the thighs. If the hydrocele is properly located and of sufficient size to produce impingements on those veins draining the uterus, the symptoms of menorrhagia and perhaps of passive congestion in the uterus will manifest themselves. If the pressure takes place upon the rectum and

if the size of this cavity is occluded it gives rise to symptoms of constipation and very likely of hemorrhoids. If the pressure is forward upon the bladder it decreases the size of this organ and gives rise to frequent micturition, or if it is upon the urethra, dysuria manifests itself; if a congestive endometritis results from the formation of hydrocele, leukorrhea is also an associated symptom.

Prognosis—Prognosis is favorable of the disease and is dependent upon the release of pressure upon those nerves which are involved in the production of the incoordination. If only the nerve fibers supplying expansion impulses and those supplying secretory impulses are involved, then the release of this pressure allows Innate to decrease the amount of fluid formed to the normal degree, and also to produce an opening through the fallopian tube whereby the contained fluids may make their escape into the uterine cavity. The results in this disease should be comparatively rapid, as the structural changes which have taken place are not extensive.

Fibromata of the Ovary

Definition—Fibromata of the ovary is an incoordination characterized by the overgrowth of atypical connective tissue cells resembling those found in normal fibroid tissue.

Etiology—Subluxation at P. P. Although of rare occurrence and of comparatively small size, seldom larger than a hen's egg, these tumors are occasionally found in the substance of the ovary. They are due to subluxation in the lumbar region which produces the impingements involving an excessive quantity of expansion impulses being carried to the connective tissue of the ovaries. These tumors are usually symmetrical in shape and developing as they do, near the center of the ovary, they produce a symmetrical enlargement of that organ. Occasionally, however, the impingement is upon those fibers which supply the connective tissues near the surface of

the ovary and, as a consequence, there is a marked projection from the surface either between the layers of the broad ligaments or in such a position that the peritoneum is forced upward to accommodate the growth. These growths are hard, indicating that the excess is due to an excessive quantity of fibrous tissue rather than to an infiltration of fluid. If they are developed so they extend between the layers of the broad ligament, they are classed as intraligamentous ovarian fibroids, while if they displace the peritoneum by their enlargement they are known as sub-peritoneal ovarian fibroids. Whether they develop on one or both sides of the body is dependent on the nerve fibers which are involved by the subluxation. If only those fibers whereby one ovary are affected, the disease is unilateral, while if the subluxation is more extensive and involves nerve fibers emitting from both sides, the disease is bilateral. If developed near the surface of the organ, the tumor becomes pedunculated and is thus attached by a narrow constricted isthmus to the substance of the ovary.

If, after a fibroid tumor begins to develop the causative subluxation becomes more severe, more nerve fibers are apt to become involved and as a result of this further involvement secondary changes may intervene. The character of these secondary changes depends upon the type of nerve fibers which are involved and the extent to which they are affected. If calorific fibers are impinged, there will develop excessive heat and inflammatory changes, while if nutritive fibers are also affected, there is apt to be an infiltration of fluid. If subluxations exist at K. P. so that the proper elimination may not exist, the toxins which are formed as the result of the inflammatory changes are retained within the body and the secondary changes are more pronounced. There is a possibility also of constriction taking place upon the pedicle which attaches the tumor to the ovary and if this condition does exist the enlargement may become entirely separated from its original point of attachment. Thus it becomes a migrating tumor

until such time as new attachments are formed between it and some of the surrounding structures with which it comes in contact. When these new attachments are produced, new blood supply is effected and thus oxygen and nutritive materials are carried to the substance of the tumor. If inflammation occurs in the substance of the fibroid growth it is very possible that excessive exudation will take place on the surface of the tumor to such a degree that adhesions will be formed.

Symptoms—Symptoms of menstrual disorders are a common feature in fibromata and are, as a rule, the result of passive congestion being produced in the uterus by the pressure of the tumor upon those veins which drain this organ. In some events dysmenorrhea results from this inflammation or from the prolapse of the ovary which is materially increased in weight so that it presses upon the surface and decreases the size of that canal, thus preventing the free passage of the menstrual flow. Not extremely painful because of its diminutive size, still this tumor gives rise to some degree of discomfort. If of maximum size, it usually increases the weight of the ovary to such a degree that the supporting ligaments are incapable of holding it in its normal position and, as a consequence, more or less pressure is produced upon all the pelvic viscera. As a result of this pressure, the patient is subject to sensations of dragging in the lumbo-sacral region and to some slight pressure symptoms in the lower pelvic region. These feelings of discomfort are manifest more especially when the patient is in the upright position than when in the recumbent position, for the reason that in the latter event the weight is released from its resting place on the lower pelvic organ. The growth of the tumor is slow, as are the majority of benign tumors, and it may very often exist for long periods of time without the patient becoming aware of its presence. It is only on those rare occasions when the tumor develops to a size greater than that of a hen's egg that marked symptoms of pain and menstrual disorders are apparent.

Prognosis—The prognosis is favorable and in this particular type of tumor a great length of time should not be necessary to completely relieve the condition. Primarily, the subluxation in the lumbar region must be rectified. After this restoration, however, it is necessary for Innate to tear down the excess material which has been formed and it is necessary for the excretory systems of the body to carry away the products of this disintegration. The tumor, however, is a small one, as a rule, and for this reason the time occupied in affecting a complete recovery is not prolonged.

Sarcomata of the Ovary

Definition—A malignant tumor of the ovary, rapid in its development and derived from tissues of mesoblastic origin.

Etiology—Subluxations at K. P. and at P. P. In this incoordination there is a very rapid growth of the tumor with secondary changes occurring early in the disease and progressing very rapidly. This is due to the involvement of nerve fibers affecting the ovary, together with a combination of impingement on those fibers which supply the kidneys, thus decreasing their possibilities of elimination. This tumor is one of the most frequent of the solid tumors of the ovary. Variable in size, this tumor is sometimes of microscopic dimensions and from this small extent it may develop to the size of an adult head. In the latter event, it attains such a size that it extends up into the abdomen and may turn aside the abdominal viscera. In the beginning it is smooth and symmetrical in shape and does not disturb the general contour of the ovary because it is practically always attached to the ovary by a small pedicle which allows it to lie either between the layers of the broad ligament or to push aside the peritoneum and project this tissue into the peritoneal cavity. In the former case, it is known as the intraligamentous variety while in the latter event it is known as the sub-peritoneal

type; either hard or soft in consistency, dependent upon the nerve fibers which are impinged, but may produce pressure upon any of the surrounding structures and often results in a general ascites or in oedema of the lower extremities. It may have the same mechanical effect upon the uterus as is produced by ovarian fibromata, namely, it compresses the veins which drain the uterus and produces here a congestive inflammation. The majority of cases are unilateral, due to the impingement of the nerve fibers, extending to only one ovary. It is only in about one-fifth of existing cases that are bilateral. The growth of the tumor is very rapid because of the marked character of the subluxation, which is associated with it and in a very few months it may assume a huge size. This being a malignant tumor and metastasis being associated with malignancy, it is very probable that metastatic nodules occur in remote organs in any state of the disease. They are, however, more apt to occur in the latter stages than in the early stages. The development of secondary tumors, due to metastasis, is dependent upon the condition of the spine where the nerve fibers emit, supplying those blood vessels where the nodules find lodgment. If these nerve fibers are impinged, so that the proper amount of nutritive impulses may not be supplied to the walls of the blood vessel, where the metastatic nodules find lodgement, then Innate is incapable of offering proper resistance to the growth of the tumor. This fact, together with an excess of expansion impulses in the particular part of the body where the nodules find lodgement, gives rise to their extreme expansion. On the other hand, if the spine is normal in those regions where the nerves emit, supplying blood vessel walls, wherein the nodules find lodgement, the excessive materials which are present here are readily disintegrated and absorbed, being carried away through the ordinary excretory channels of the body. There is no question but that many metastatic nodules are broken off from sacromata and carcinomata and are carried either in the blood stream, in the

lymphatic stream or through the intercellular channels to many of the remote tissues of the body. The majority of these undoubtedly are absorbed and thus no secondary growths result from them. It is only, however, when the nodules find lodgment in those parts of the body, which are possessed of a deficient resistance that they continue to expand and ultimately produce secondary growths.

When pregnancy is present all of the pelvic organs are materially congested and at this time there are naturally large quantities of nutritive materials and of oxygen supplied to the sacromatous growth as well as to the other pelvic structures. Both nutriment materials and oxygen are necessary, together with excessive expansion impulses to produce overgrowth, and thus it is that when pregnancy exists, the tumor develops more rapidly than in those conditions where pregnancy is not present.

This type of tumor may exist at any period of life, but is more apt to occur in children and young women than is the carcinomatous type of malignant tumor. Due to the rapid growth of the tissues which constitute the sarcoma, Innate is incapable of forming a connective tissue capsule rapidly enough to eliminate the growth from the surrounding structure. If the growth were slower and if the nutritive and reparatory fibers were not involved in the degree to which they are here, then the tumor would be incapsulated and would remain as a benign growth. However, the rapid extension of tissues allows for the projection of roots or prolongations into the surrounding structures and thus it is that a sarcoma is much more apt to reproduce itself by extension than the benign tumors are. Furthermore, the sacromatous growths are the result not only of expansion impulses in excess, but also they are the result of a lack of nutritive and reparatory impulses reaching the tissues of which they are composed. It is this abnormality that gives rise to the sec-

ondary changes which occur with such a degree of rapidity in all malignant tumors.

Symptoms—One of the most common symptoms present in sarcoma of the ovary is that of leukorrhea, which is due to the pressure upon the veins or veins draining the uterus. Furthermore, if it attains a great size, it displaces the surrounding abdominal viscera and causes symptoms which result from this pressure. If the pressure takes place upon the cervical canal, dysmenorrhea results as a consequence of the inability of the menstrual flow to find a free passage through the cervix and into the vagina. If the pressure is backward upon the rectum, it produces obstruction of this canal and decreases its size, so it is incapable of retaining large quantities of fecal material. If the pressure is upon the surface of the rectum, it is very apt to affect the drainage vein from the anal canal and produce protrusion here, which results in hemorrhoids. Further, this pressure upon the rectum serves to produce obstructive constipation and the consequent strain which results from this incoordination serves to extend the blood vessels of the anal canal and of the lower rectum to an even more marked degree. If the pressure is forward against the posterior surface of the bladder it serves to decrease the size of this cavity and thus it results in frequent micturition. If the pressure is lower in the pelvis and against the urethra, it serves to partly occlude that canal and results in dysuria. It must also be remembered that in sarcoma inflammatory changes and other secondary incoordinations appear early in the disease and, as a result of these changes, adhesions are very apt to form between the sarcomatous tumor and the adjacent structure.

Pain is much more severe in sarcoma than it is in fibroma of the ovary for the reason that the growth is much more rapid and the displacement of the surrounding organs is much more radical than in the benign form of tumor. This rapid displacement of the surrounding structures serves to stretch their

tissues and the supporting tissues which bind them in position more rapidly than Innate can accommodate the change and, as a result, pain manifests itself more readily here.

It must be remembered that because of the rapid growth of the sarcoma it sends out branches or roots into the surrounding structures and, as a consequence, they may undergo the same structural alterations that occur in the ovary. Whether they undergo these changes, however, is dependent on whether the nerve fibers which supply them are subject to the same character of impingement as occur in those fibers which supply the ovary. If these subluxations do not exist, they will not become involved by secondary growths, due to extension. If, however, they are impinged to a sufficient degree the secondary changes due to extension will occur.

General symptoms manifest themselves in this incoordination while they are not present in benign tumors of the ovary. These general symptoms manifest themselves in the form of a gradual emaciation, cachexia and final debility. This because of the fact that the sarcomatous growth gives off large quantities of toxins which must be eliminated from the body and this serves, in the majority of cases, to overburden the organs of elimination to such a degree that they are not capable of meeting the requirements. Furthermore, the nutritive materials which should be utilized in other parts of the body to produce the normal bodily growth are very largely utilized by the sarcoma and are demanded and taken by it because of its rapid development. Both of these factors serve to decrease the nutrition of the normal tissues of the body and to decrease the resistance which would be offered by the normal tissues if they were supplied with the proper amount of mental impulses and if they were not overtaxed by excessive quantities of toxins.

Prognosis—The prognosis for sarcomata of the ovary is favorable if the disease comes under the care of the Chiropractor in the early stages. It is, however, unfavorable if sec-

ondary changes have occurred to such an extent that the centers from which normal tissues are developed become destroyed. It is essential that this disease be recognized in its early stages which can only be accomplished by giving strict attention to the rapidity with which the disease has developed. It must also be borne in mind that this form of tumor is apt to occur early in life, while the fibroid growths may occur at any period during life. The correcting of the causative subluxation will arrest the development of the sarcomatous growth and if the general bodily resistance has not been lowered to such a degree that it is incapable of producing normal activity then health will ultimately be restored.

Carcinoma of the Ovary

Definition—An incoordination in the ovary characterized by excessive expansion of tissues of hypoblastic or epiblastic origin.

Etiology—Subluxations at K. P. and at P. P. This form of tumor is dependent upon impingements of those nerves which lead to an excessive expression of expansion impulses and a lack of nutritive and reparatory impulses. Dependent upon the exact form which the tumor assumes as it develops, it is classed as a scirrhus, a medullary or colloid growth. The disease may begin as a primary incoordination, due to a marked affection of the ovary itself which, in turn, is due to an impingement on the nerve fibers which supply it. On the other hand, it may be a secondary incoordination due also to impingement on those nerve fibers which supply the ovaries, but preceded by the development of a carcinomatous tumor in the uterus or in some other adjacent organ. While in the sarcomatous tumor we have an affection which usually involves only one ovary, in the carcinoma we have a neoplasm which involves both ovaries in the majority of cases. While the carcinoma may exist as a primary condition without being

preceded by a carcinomatous growth elsewhere, yet it is, as a rule, preceded by some other form of abnormality in the ovary itself. This usually takes the shape of a cystic tumor or some form of solid ovarian tumor. This form of tumor is usually developed on the outer surface of the ovary and is attached to that organ by a constricted pedicle and projects either beneath the peritoneum, forcing it aside, or between the layers of the perovarium or broad ligaments. In the former event it is known as a sub-peritoneal cancer and in the latter event it is known as an interstitial cancer.

This form of tumor may obtain a large size, frequently developing to a size as great as that of a man's head. On the other hand, it may be extremely small, not exceeding that of a small egg. The isthmus by which the tumor is connected with the adjacent organ is usually destroyed upon secondary changes and forms new attachments with the organs with which it comes in contact. When due to more severe impingements on the nerve fibers supplying the ovary, a cancer develops from a heretofore benign solid tumor, or a cystic tumor, the cancer retains much of the original form which is present in the primary growth. Because it grows rapidly, Innate does not have time to sufficiently adapt herself in forming a capsule and cutting off the tumor from the surrounding normal tissue; thus it is that the pedicles project into and infiltrate the surrounding structures and the tumor often extends by contact to the surrounding structures. This extension may involve the peritoneum, lymphatic vessels and glands, the uterus, or the connective tissues of the pelvis. It may also involve either the bladder or the rectum, but it must be distinctly remembered that none of these surrounding structures are affected by the cancerous growth, unless they, themselves, are abnormal because of not receiving the proper quality and quantity of mental impulses. The tumor may extend to and involve remote parts of the body, due to metastatic nodules finding lodgement in the blood vessels through which

they attempt to find their way. The majority of these nodules are absorbed, because the tissues with which they come in contact are normal and capable of excreting their disintegrated products. They only produce secondary tumors when the tissue in which they find lodgement is not properly supplied with nutritive, reparatory and other impulses and, as a consequence, the abnormal cells develop and flourish. Carcinomatous tumors are not so apt to produce secondary changes by metastasis as are sarcomatous growths because of the fact that in the latter the blood comes in direct contact with the parynchema of the tumor, while in the former it is invariably contained in blood vessels which lie in the stroma supporting the tumor.

This type of malignant growth is more apt to occur late in life, while the sarcomatous tumor is distinctly a malignant growth of early life. Rarely cases are met with, however, wherein the cancer develops before the age of puberty. Secondary growths of this character are more apt to occur in the ovary than are primary growths, due to the fact that there is extension into the organ from the cervix and uterus where cancer is very apt to manifest itself as a primary incoordination. It will be remembered that cancer of the cervix is apt to follow lacerations due to abortion or labor and that cancers in this location constitute about thirty per cent of all cases.

Symptoms—Remembering that the cancerous tumor is very apt to follow as a secondary condition to a benign solid tumor or to a cystic tumor of the ovary, we should be careful to look for the symptoms of either of these two forms of disease as preceding those which develop from the cancer itself. If a hitherto benign tumor suddenly begins to undergo rapid enlargement, it is indicative either of a malignant tendency of the tumor or of the development of cysts in a tumor which already exists. Ascites may manifest itself, due to the mechanical pressure which is exerted by the tumor on the veins draining the abdominal region, thus damming the blood back

in the capillaries of this region, and together with impingements in the lumbar region which affect the tonicity of the muscle fibers in the arterioles and veins it serves to produce a weakening in the wall which allows for the escape of excessive quantities of fluid. Undoubtedly, also, the condition of the kidneys which is always associated with cancer of any organ has much to do with the development of ascites. This because of the fact that general elimination is deficient and the fluids and toxins of the body are all subject to being dammed back into the tissues.

Peritonitis may develop with all its associated symptoms of extreme pain and an increase in the bodily temperature and in the pulse rate. Peritonitis, when it does occur, usually results from the direct extension of the cancerous tumor into the surrounding structures and is associated particularly with the degenerative changes which the tumor finally undergoes. It must be remembered also that nerve fibers are impinged in such proportion that they are apt to produce inflammatory changes and the escape of serum to surrounding structures. This escape of serum is productive of adhesions which, as the growth continues to develop, becomes separated and leaves raw, bleeding surfaces, which are particularly susceptible to the toxins given off from the tumor. Oedema of the lower extremities is a common associated condition and is the result of mechanical occlusion of the veins draining the lower extremities. Cachexia develops as the result of the inability of the excretory organs to carry away the products of the secondary changes which occur in the malignant tumor, and also from the inability of these organs to carry away the toxins which are produced even before the secondary changes manifest themselves. There is a gradual loss of weight due to lack of nutrition and as a consequence of the deficiency in all the tissues of the body, there is an associated progressive loss of strength. These general symptoms develop because of the damming back of toxins in the normal tissues of the body,

which is due to the inability of the excretory organs to properly function. They are also the result of the utilizing of large quantities of nutritive materials by the malignant tumor in its rapid development. These nutritive materials, if it were not for the tumor, could be utilized and would be utilized by the normal health tissue, but they are taken away and appropriated by the malignant growth.

Pain, as a rule, is not acute in cancer of the ovary during the primary stages of the tumor's development. There is, however, a sensation of fullness and a dragging sensation which is centered in the lumbo-sacral region. If the tumor attains a great size, sensations of pressure are noted in the pelvis, which are the result of the tendency of the ovary with its attached tumor to assume a lower position in the pelvis than in the normal state. In those cases where the development is extremely rapid and where the surrounding organs are markedly displaced, the pain is more acute and it becomes more severe in all cases after the secondary changes manifest themselves. Pain is also increased in severity upon the development and the later separation of adhesions with adjacent organs. It must also be remembered that the pain is in some degree dependent upon the surrounding structures and if this involvement is in the rectum or in the bladder and serves to mechanically obstruct these cavities, the pain may become extremely intense. Furthermore, if coils of the small intestines become affected by direct extension of the tumor, they may undergo changes to such a degree that their lumen will be in part or completely occluded, in which event the pain will become extremely severe.

Leukorrhea is usually associated with this incoordination and is due to mechanical obstruction taking place upon the veins draining the uterine wall. If the bladder is affected by direct extension of the tumor, its walls tend to lose their tonicity and thus the symptom of frequent micturition develops. If the extension becomes marked, the urethra may also

become involved and produce dysuria. If the rectum is affected, which is a more frequent complication, its lumen becomes somewhat constricted and thus obstructive constipation and hemorrhoids manifest themselves.

Finally, it must be borne in mind that this disease is usually a secondary one and is preceded by carcinoma in the wall of the uterus and all the associated symptoms of uterine and cervical carcinoma are present which are very apt to mask those of the ovarian carcinoma.

Prognosis—Although under medical treatment the prognosis is considered as highly unfavorable, even under radical operative treatment, this cannot be said to be true under Chiropractic adjustments. It is estimated that even after removal by operation of the carcinoma of the ovary they reappear and death supervenes in the majority of cases within one year. The prognosis under adjustments is very largely dependent upon the period in its development that the patient comes under the care of the Chiropractor. If in the early stages, before secondary changes have manifested themselves and before the centers from which development take place have been destroyed, the prognosis is favorable. The cause of the growth appearing primarily is a lack of certain types of mental impulses and an excess of other types, and when those subluxations are reduced, which cause this abnormality, the disease will reach a favorable termination. This provided those centers of development are left which Innate may utilize in replacing the abnormal tissue with normal ones. The prognosis is also in part dependent upon the vitality which the patient manifests and upon the general bodily condition. If the resistance of the patient has not been too far reduced by the efforts of Innate to expel the toxins and if the vitality is somewhere near the normal, then the prognosis is favorable because the possibilities remain which Innate may utilize in restoring normality.

Cystic Tumors of the Ovaries

This condition is one wherein there is an accumulation of serum in the substance of the ovary which is variable in character and in amount.

Cysts of the ovary are classified under two main divisions, dependent upon that part of the ovary in which they are developed. If it is in the outer part, which is known as the Oophoron and from which are developed the ova lying in the Graafian follicles, the tumors are known as Oophoritic cysts, while if they are found in the medullary portion, which never contains the Graafian follicles or the ova, they are known as the Paro-oophoritic cysts.

Under the Oophoritic cysts we have four subdivisions known as the follicular, corpus luteum, glandular, and the dermoid cysts. Under the Paro-oophoritic cysts we have only one subdivision and that is known as the papillary cyst. We will first consider those under the first group, and of these it is found that the follicular cyst displays different symptoms than the other three varieties, so that follicular cysts we will consider as an independent disease giving its general definition, etiology, symptoms and prognosis, while in the other four types we will first give the definition and etiology of each, following them with a group of symptoms which is present in all. We will also group the prognosis of the latter four varieties under one general consideration.

Follicular Cysts

Definition—This is an incoordination characterized by the accumulation of serum in the Graafian follicles and it is sometimes known as a dropsical Graafian follicle.

Etiology—This disease is due to the excessive supply of expansion impulses to the connective tissues which constitute the wall of the Graafian follicle and is the result of subluxa-

tions in the middle lumbar region. There may also be associated abnormalities in the kidney region of the spine which is interfering with the general bodily elimination. Particularly is this true if the disease is associated with a chronic ovaritis, wherein there is a development of an excessive amount of connective tissue throughout the entire organ. The excessive expansion of connective tissue cells constituting the wall of the follicle does not permit of the rupture of this follicle and the consequent escape of its fluid, together with the contained ovum into the cavity where it may be taken up by the fimbriated extremities of the Fallopian tubes. This condition may also be brought about by excessive expansion impulses which occur on that side of the follicle nearest the surface of the organ, but not necessarily an excess in expansion impulses supplying those cells on the deep side of the follicle. This abnormality in development does not permit of the progress of the Graafian follicle toward the surface of the organ and thus there is an excessive amount of tissue between its surface and the surface of the follicle, so that the ordinary pressure from within will not produce a rupture toward the external. In those conditions where there is a general hyperplasia of the connective tissue due to inflammatory changes in the ovary, we have also an excessive amount of expansion impulses manifesting themselves in the substance of the ovary and a consequent inability of the follicle to break through to the surface of the organ. Further, it must be remembered that in inflammation of the ovary there is an exudate of serum from the congested blood vessels which finds its way to the surface of the organ and which here undergoes organization so that strong adhesions are formed, which serve to produce a thickening in the surrounding capsule. Thus it is that the subluxation at K. P. is involved in the production of the follicular cyst as well as the subluxation in the lumbar region, which produces an overgrowth of the connective tissues.

These cysts are variable in size from microscopic dimen-

sions to the size of a small lemon, but in rare instances they may attain a size of five or six inches in diameter. When an excessive development is manifest, it is the result of an excessive manifestation of secretory impulses in those cells which line the follicle. Consequently, an excessive amount of fluid is generated which is thrown into the cavity and, being unable to find a means of exit, becomes a part of the cyst. One ovary may be the seat of a number of cystic growths, wherein, month after month, follicles have failed to rupture and each one remains as an independent cavity. When several cysts are present, they are of variable sizes, dependent upon the degree to which the secretory process is conducted by Innate through the cells which line them. Thus it is that if the ovary is involved in this form of cyst, there may be several of different sizes. Again, if nutritive fibers supplying the ovary are involved, there is apt to be a depletion of the tissues lying between adjacent cysts and, as a result, they coalesce to form one large cavity. The fluid which is contained is of a clear color, alkaline in reaction and of a specific gravity of about 1.010. Occasionally there is a rupture of one or more blood vessels in the wall of the cyst, due to the rapid development and extension of its walls and, as a consequence, there may be a mixture of blood with the serum which is present, giving to the fluid a dark, brownish color. If nutritive fibers and reparatory fibers are impinged, the secretions of the cells forming the lining membrane may be purulent in character and thus give rise to the symptoms of inflammation. In the small sacs there is usually an ovum present but as it continues to develop the ovum becomes disintegrated and in the later stages cannot be distinguished from the balance of the substance contained. Although the immediate wall of the cyst may be thin and translucent, nevertheless, it is composed of a very tough connective tissue. Occasionally there is an extensive overgrowth of tissue forming the wall of the cyst. Whether the disease is bilateral or unilateral depends upon

the nerve fibers which are involved by the causative subluxation. If only those supplying one ovary are affected, that ovary alone develops follicular cysts while, if those extending from each side of the spinal column are affected, there are apt to develop follicles in both cysts.

Symptoms—The symptoms are dependent in their extent upon the size of the cyst or cysts which are present, also upon the location of the ovary, whether it is normal or abnormal, and upon the association of inflammatory changes and adhesions in the ovary. If the enlargement is only slight, due to a slight accumulation of fluids, and if the ovary remains in its normal position, the symptoms are practically the same as those of a chronic ovaritis, but if the cyst is associated with a more marked enlargement of the ovary and with a descent of the organ to a position lower than the normal, then the symptoms of prolapse of the ovary will manifest themselves. The most common symptom is that of pain, which is much more severe when the ovary attains sufficient size to produce a prolapse. Further, adhesions between the ovary and the surrounding structures, which are due to the effusion of serum to the surface of the organ and the later organization of those fluids, are productive of severe pains, usually of the lancinating variety and more marked when the patient is in the upright position. The symptoms of pain are more marked in enlarged tumors, particularly those which project into the pelvic cavity, than they are in small tumors, which do not crowd the surrounding viscera. When this crowding takes place it naturally compresses the tissues composing the adjacent organs and produces pain in them. Furthermore, even though the enlargement is great, if it projects into the abdominal cavity it meets less resistance here and is not productive of as much pain as if it projected downward into the pelvic cavity. Mechanical pressure upon the veins draining the walls of the uterus is very apt to result in menorrhagia, and in the more severe cases in metrorrhagia.

Prognosis—The prognosis is favorable under adjustments and the length of time occupied in restoring the patient to the normal state of health is dependent upon the time occupied in restoring the displaced vertebra to its normal position and upon the destruction of the excessive tissues which have been formed. Here, of course, enters the problem of the associated conditions which are present with follicular cysts and of the degree to which the connective tissues have undergone excessive development. If this is slight, the time occupied in tearing down the excessive tissues is comparatively short, while if the connective tissues have been developed to a marked degree the period will be longer in restoring normality.

Corpus Luteum Cysts

Definition—These are minute cysts which are formed near the surface of the ovary in the cicatrical tissue which is left as the result of the rupture of the Graafian follicles.

Etiology—Subluxations at K. P. and at P. P. Although the condition is an extremely rare one, still occasionally cases are met with wherein there is an accumulation of fluid in the cicatrical tissue, which is the result of the rupture of the Graafian follicles on the surface of the organ. Nor can it be said that this condition is confined to the corpus luteum of pregnancy as it is occasionally found in nulliparae. Impingements in the lumbar region serve to produce an overgrowth of the connective tissue which is formed in the capsule where the follicles rupture and also an excessive amount of secretory impulses carried to the secretory cells in this region serve to produce an increased quantity of a straw-colored fluid which finds no means of exit and thus constitutes a cyst. It is seldom that the cyst attains any marked proportions. Occasionally, however, it may develop into a tumor the size of a small cocoanut. Beside the excessive secretion which is present in this particular tissue, there is a deficiency in the general

excretion from the body which would otherwise be enabled to carry away the excess fluids which are formed.

Glandular Cysts

Definition—An incoordination in the ovary characterized by the filling of the tubes which remain as a foetal manifestation of the tubes of Pflüger.

Etiology—Subluxations in the lumbar region and at K. P. are the causative factors in producing this incoordination. Primarily the tubes of Pflüger which are present in foetal life and from which the Graafian follicles develop remains as the result of the inability of the nerve fibers to transmit to these tubes the proper nutritive impulses and expansion impulses. As a consequence of this inability, they retain the same characteristics which they possess in foetal life. Further, there is an excessive amount of secretory impulses transmitted to the walls of these tubes as the result of impingements in the lumbar region, and thus large quantities of fluids are formed in them which fail to make their exit through the wall of the ovary. There is no ovarian neoplasm, either of the solid or cystic forms, which are as common as these glandular cysts and, although they may be developed during any period of life, they are more apt to occur between the ages of puberty and the menopause.

Their size depends upon the degree to which the nerve fibers producing them are impinged, and particularly is this size dependent upon the amount of secretory impulses which reach the walls of these tumors. Cases are known wherein the tumor attains such a size that the abdominal cavity is almost entirely occupied by them and the abdominal viscera are forced forward and upward so that even the tissues of the thorax are crowded and compressed. Although ordinarily the growth is spheroidal in shape, it may, if it becomes extremely extensive, lose that shape because of the compression which

is made upon it by the surrounding viscera with which it comes in contact.

Although, as a rule, the surface of the cyst is whitish in color and possesses a glistening appearance, occasionally it is darker in hue, due to the presence of blood mixed with the contained fluids. Then again its shape may be altered by the formation of adhesions with the surrounding structures or by the existence of cicatrices which have been formed in the early stages of the development, when an opening was made through its wall. Occasionally, due to a lack of motor impulses being supplied to the walls of the cyst, the fluids may break through and become infiltrated in the wall and thus produce an irregularity in the general contour of the tumor. Occasionally, also, there is a gathering of mucous in the minute spaces present in the wall and as the result of this accumulation, minute mucous nodules are formed on the surface.

Usually the condition is associated with a lack of nutritive impulses and expansion impulses in the ovary, so that the ovarian tissue becomes entirely destroyed, and usually nothing remains of this normal tissue after the tumor attains the size of a cocoanut. Rare cases are met with, however, where the ovary retains its characteristics and where the corpus luteum is found as a yellowish spot on the surface of the cyst.

The glandular cyst, as a rule, pushes aside the peritoneum in the course of its development and thus extends into the upper pelvic and the abdominal cavity rather than growing between the layers of the broad ligaments. For this reason it becomes an intra-peritoneal tumor or a sub-peritoneal tumor, except in the rare cases where the development does take place between the layers of the broad ligaments, and it is known as an intra-ligamentous or extra-peritoneal growth. The manner in which the tumor develops and the tissues which are affected by its development depends upon the character of the nerve fibers which are impinged and the extent to which this involvement is manifest. If the tumor develops on that side

of the ovary which is next to the parovarium and if the tissues of the broad ligament do not receive the proper amount of impulses to offer resistance to the expansion of the tumor, then it becomes intra-ligamentous. On the other hand, if it develops on a surface of the organ which is not adjacent to the folds of the broad ligament, but protrudes beneath the peritoneal membrane it is then known as a sub-peritoneal tumor. This type of cysts develops by a number of the small tubes of Pflüger becoming involved by excessive secretion and as a result in the early stages of the disease there are a number of minute cysts which constitute a general ovarian enlargement. Eventually, however, due to the absence of nutritive and expansion impulses between the individual cysts, the tissues begin to disintegrate and ultimately the multilocular formation becomes unilocular in character and instead of being composed of a number of minute cysts, it develops into one large cystic tumor. Ordinarily, the growth is unilateral, but it may be bilateral if the nerves supplying both ovaries are affected by the causative subluxation. However, they are not developed with the same degree of rapidity and one tumor is usually much larger than the other. In very rare instances both tumors become markedly enlarged and adhesions are formed between the adjacent walls which come in direct contact with one another. As a result of depletion in these adjacent tissues there may be an opening formed between the two independent cysts and they become united as one great cavity but with two distinct pedicles, each attached to an individual ovary.

The cyst is attached to the uterus by a pedicle of thickened connective tissue which is formed by an overgrowth of the ovarian ligaments, the Fallopian tubes and the broad ligaments. Usually the fluid is a straw color, and is alkaline in reaction, but it may become altered, due to the presence of blood or degenerated material. When blood is present it results from a lack of motor impulses manifesting themselves

in the walls of the blood vessels contained in the cystic wall. This lack of motor impulses allows for a separation of the fibers constituting the vessel wall and permits of the escape of blood into the cavity of the cyst. The amount of blood which is found here depends upon the size and the character of the vessel which is ruptured. If the vessel is an artery of comparatively large size, the pressure in it is great and much blood escapes before a point of balance is reached between the blood in the vessel and that in the cyst. If a vein ruptures, a comparatively small quantity of blood finds its way out because the pressure in the vein is much less than that in the artery and, as a consequence, less blood escapes before a point of balance is reached between the two pressures. Specific gravity of the fluid contained varies, dependent upon the substances which are found mixed with the serum, but if no solid materials other than those which are associated with the normal serum are present, the specific gravity is approximately 1.010 to 1.060. The character of the fluid varies, dependent upon the amount of solid materials which are associated with the lymph and it may be very thin and serous, or it may be thick and viscid, forming almost a jelly-like substance. The character is determined very largely by the degree of abnormality in the secreting cells and by the degree of excessive heat which is expressed in the cyst. If the secretory impulses are very largely in excess and if the calorific impulses are approximately normal, the character of the contained substance is largely fluid. If, on the other hand, the degree of secretory impulses is not so marked and if the calorific impulses are expressed in marked excess, the contained substance is more solid in character.

Dermoid Cysts

Definition—This is an incoordination characterized by the formation of a cyst in the ovary, the walls of which are lined with a tissue resembling the epidermis which contains der-

moid glands, hair follicles and hairs and various other tissues abnormal to the part.

Etiology—Subluxation in the middle lumbar region. Dermoid cysts are not confined to the ovary alone but may develop in any part of the body. Particularly are they common in glandular structures and they constitute the majority of cystic tumors of the ovary, the development of which is noted before puberty. These cystic tumors develop as the result of abnormalities existing in the lumbar region of the mother during the development of the foetus. These abnormalities in the nerve supply of the uterus of the mother manifest themselves by subluxations in the lumbar region of the foetus, which give rise to the placing of normal tissues in abnormal locations in the foetal body.

It is seldom that these tumors obtain a marked size, but occasionally they may develop to a diameter of five or six inches. While they do not attain a greater size than we have indicated where inflammation is not present, there is always the possibility of further impingement taking place, which give rise to excessive expression of calorific impulses and of secretory impulses in the walls of the tumor and this results in a very rapid development and a marked increase in size. The fluid contents which are present here as the result of the secretions given off by the sudoriferous and sebaceous glands which are thrown into the cavity of the cyst, and because the tissue forming the lining membrane is really dermoid tissue, it is not capable of absorbing the fluid as rapidly as it is formed. For this reason it continues to accumulate until such a degree of pressure is reached that it serves to force itself into the tissues of the surrounding wall, whence it is carried away through the serous channels of this tissue. In color, the outer surface of the tumor is of dull gray, but it may be yellowish-brown, due to the mixing of the contained straw colored serum with blood.

This form of tumor, like the glandular cysts, is found, as

a rule, in the form of a sub-peritoneal growth, rather than an intra-ligamentous growth. They are, ordinarily, unilocular, but occasionally cases are met with which present multilocular development. It must be remembered, also, that there is the possibility of this form of tumor developing in conjunction with the glandular cysts and if so, the enlargement presents a multilocular appearance. Also there is a possibility of several dermoid sacs being developed in the same ovary and, as a result, two or more of these cysts may be formed, each one attached by an individual pedicle to the same organ.

It is, indeed, rare that the affection involves more than one ovary, but occasionally cases are met with wherein both ovaries possess dermoid cysts. This is dependent entirely upon the degree of impingement and whether one or both nerves are impinged by the causative subluxation. Where more than one dermoid cyst develops in a single ovary, and where there is a depletion of tissue between them, due to a lack of nutritive and reparatory impulses they may coalesce and form a single large cavity. It is not always that the same type of cyst develops in both tumors or in the same tumor if more than one is present in the single organ. One of them may be a dermoid cyst and the other a glandular cyst, depending upon the degree of impingement which manifests itself in the lumbar region. The dermoid cysts, like the glandular cysts, are attached to the uterus by the ovarian ligament, the Fallopian tube and the broad ligament, all of these structures being thickened and hypertrophied.

After the original formation of the tumor, during foetal life, from the subluxations existing in the lumbar region of the mother and the consequent subluxation in the corresponding location in the foetus, the tumor may remain in a dormant state and never undergo further development. It is not, as a rule, common for it to undergo further enlargement after the original formation unless a greater degree of subluxation manifests itself, producing an especially excessive manifesta-

tion of secretory impulses. This manifestation is usually associated with an excessive amount of calorific impulses which give rise to the production of inflammatory changes in the wall of the cyst. The wall becomes adherent to the surrounding structures, due to the inflammatory changes which allow for the osmosis of serum to the outer surface, and this serum later undergoes organization forming adhesions with the surrounding structures. If the subluxations in the lumbar region become more extensive and cut off the nerve supply of the motor variety, ruptures may be formed in the wall of the cyst, which allows for the escape of the contained fluids into the surrounding cavities. Thus, sinuses are often formed, whereby the fluid which is manufactured by the wall of the cyst continues to discharge and if it comes in contact with the mucous membranes, it is apt to be productive of inflammatory changes. It is very irritating to these membranes and if impingements already exist, which affect the surfaces with which the fluids come in contact, these surfaces may develop inflammatory alterations. This is a condition which is more apt to produce grave symptoms if the rupture takes place into the peritoneal cavity, as it may give rise here to development of a general peritonitis. The suderiferous and the sebacious glands which are found in the wall of the cyst may undergo cystic degeneration and thus protrude to the external, giving to the outer surface a lobulated appearance. Occasionally other structures than the skin are found in the wall of the tumor and these may comprise teeth, bone, cartilage, muscle fibers, brain cells, nerve cells and isolated structures resembling the heart, the eye, or the trachea.

Sebacious or oil forming glands are more commonly found than suderiferous glands and when they are present they are usually found in groups. When mucous membrane is present in the wall of the cyst, it resembles that which is found in the alimentary tract. Hair is usually found growing upon the wall of the cyst and may be present in large quantities or in

small quantities. It varies in length from a fraction of an inch to several feet, and when it is extremely long it is found to be coiled up or rolled in a small ball. The color of the hair varies, but is rarely found to correspond to that which is found on the surface of the patient's body. In old women this hair is apt to become white, as do the hairs on the surface of the body; in some events it may fall out, leaving a bald spot, as sometimes occurs on the scalp. The great majority of ovarian tumors contain teeth and they are usually imbedded in a mass of cartilage or bone. This bone may be imbedded in the wall of the cyst or it may exist as an independent structure in the cavity and be completely surrounded by fluid. It is rare that the cyst contains more than ten or twelve teeth, but cases have been known where several hundred were found in the tumor. These teeth are not, as a rule, fully developed, but in a general way they resemble the canine and incisor teeth, being possessed of only a single root. If mammary glands are found in the wall of the tumor, they may be merely rudimentary, or they may be perfectly developed, presenting a nipple, as does the ordinary mammary gland.

The character of the contained fluid is variable and depends upon the character of the nerve fibers which are impinged in the lumbar region. Usually, however, it is more or less solid in consistency and of a yellowish color, really resembling the oily, fatty material which is secreted by the sebaceous glands. This contained fluid may be mixed with minute masses of more or less solid connective tissue and in some events it is very hard in consistency. In those cases where there is less fluid, it is the result of an excessive quantity of calorific impulses, which serve to dry up the fluid contents of the cyst and leave only the solid material. When the contents of a dermoid cyst are exposed to the air, the fluid usually undergoes solidification, due to the contraction of the connective tissue cells, which are found in it and the consequent squeezing out of these fluid substances between them.

Papillary Cysts

Definition—An incoordination of the paroophoron or hilum of the ovary which is the result of an excessive amount of secretory impulses expressed in the walls of the remains of the Wolffian body.

Etiology—Subluxations at K. P. and at P. P. This form of tumor is the result of an excessive expression of secretory impulses and those secretory cells which form the lining membrane of the Wolffian tubes and their development depends upon the degree of that involvement. If it is extensive, the tumor may develop to an enormous size, while if the impingement is only slight, the tumor is correspondingly small.

This tumor forms less frequently than do the glandular cysts, but they are, as a rule, developed during the child-bearing period of the woman's life. They develop much slower than the glandular variety, and, as a rule, do not attain a size greater than five or six inches in diameter. They may be formed in such a position that they extend under the peritoneum and force this tissue aside and thus they are classed as subperitoneal tumors. More commonly, however, this form, because it is developed at the hilum of the organ, extends between the layers of the broad ligament and is known as an intraligamentous cyst. Where it develops, beneath the peritoneum and pushes this membrane aside, a pedicle is formed by the broad ligament, the Fallopian tube and the ovarian ligament which serves to connect the cyst with the ovary on that side of the body. That type which develops between the layers of the broad ligament, if it becomes large enough, forces itself into direct contact with the surface of the uterus and in these events, it is very difficult to distinguish it from tumors developing in the uterine wall. This form of cyst is more often bilateral than any other form; being present as a bilateral condition, in more than half of the cases. These papillary

cysts are usually possessed of a single internal cavity and for this reason they are classified as unilocular.

They are known as papillary cysts because of the development on their inner surface of minute protrusions or warts, which are a distinctive form of ovarian cyst. These minute papillae are very soft and friable and bleed easily upon being brought in contact with any surrounding surfaces. They vary in form, being either possessed of a sessile base or a pedicle and they are of a light or dark color, dependent upon the amount of papillae which are present in them. They are extremely variable in size also, some of them being very minute in structure, while others may grow to a size of several inches in diameter. These papillae may be arranged singly or in groups and they sometimes undergo degeneration, usually of the calcareous variety, which gives rise to the accumulation of small, hard particles in the fluid. These particles give a gritty character to the fluid which is contained.

The papillae which are found here are very apt to perforate the wall of the tumor and extend into the peritoneal cavity, thus allowing the fluids which are present in the cysts to escape also. This escape of fluid is the result of excessive accumulation of serum within the cavity of the cyst, or to degenerative changes taking place in the wall, which allow for the weakening of the connective tissues forming the capsule. The secondary change which is most apt to occur is that of fatty degeneration. Occasionally, these papillary growths, having made their escape from the cyst, find lodgement on the tissues with which they come in contact and there continue to grow, sometimes into very large bodies. Whether they continue to develop after they have made their escape from the cyst is entirely dependent upon the supply of mental impulses to that tissue upon which they find lodgement. If they find lodgement on a tissue which is healthy in every way, being supplied with the proper quantity and quality of mental impulses, then the tissues will be broken down and the degener-

ated products carried away through the excretory channels of the body. However, if the mental impulse supply is not normal and if there is an expression of excessive expansion impulses, together with a lack of reparatory and excretory impulses, the tumor will form nerve supplies from the nerve fibers which are already existent in the adjacent organs and will continue to flourish and enlarge. These papillomatous growths are more apt to occur on the mesentery and on the omentum and in the Culdesac of Douglas than in any other location. This for the reason that these membranes are very richly supplied with blood vessels and with nutritive materials, and therefore the tumors which become implanted here are more readily supplied with these essentials than if they find lodgement on other tissues.

The great danger of operations for papillary cysts of the ovary is in the fact that particles of the papillomatous growths may be left in the abdominal cavity or allowed to come in contact with the walls of the incision, and there, forming a new blood supply, they will develop into a secondary papillary growth. This, of course, provided there is an excessive amount of expansion impulses manifest in the tissues wherein they find lodgement.

If an opening is made between the cyst and any of the surrounding hollow viscera, such as the uterus, the rectum or the bladder, and if papillary masses find their way into these cavities, obtaining lodgement on their surfaces, they may continue to develop here and produce various symptoms. It is possible for the cyst to produce mechanical pressure upon the veins draining the uterus and this gives rise to a congestive endometritis and a consequent leukorrhea. They may also press upon the veins draining the lower extremities and as a result, produce oedema here. Then again, the excessive fluids which are formed within the papillary cyst may, because of pressure, produce dilatation of the intercellular channels leading to the outer surface of the cyst. As a consequence, there

will be large quantities of fluid find their way into the peritoneal cavity. This gives rise to ascites and is more apt to occur in this form of cyst than in the other forms, because that part of the wall which is involved by the papillae is very soft and loose in structure and is more apt to admit of passage through it than are the other forms. The fluid which is contained is watery in character and usually of a light straw color, although as in the other forms, it may assume a deeper tint, due to the escape of blood from the vessels in its wall. This fluid has a specific gravity, varying from 1.005 to 1.040.

Symptoms of Ovarian Cysts—Symptoms of ovarian cysts are usually slow in development and the cyst is usually well under way before the patient becomes aware of the existence of any abnormal condition in the pelvis. None of the symptoms are distinctive, as they all are the result of mechanical pressure on the vessels of the pelvis which produce congestion in the structures and organs which they drain. These symptoms together with symptoms of pain are the principal ones which are noted in this incoordination and so they do not differ materially from any other growth of the pelvis which offers the same degree of pressure.

If the cyst is intra-peritoneal in character, and if it is bound down by adhesions, it usually extends into the abdominal cavity instead of downward into the pelvis, and thus the symptoms, which are associated with it, are not so marked as if the extension were downward, causing compression on the pelvic viscera. In those events where the growth extends between the layers of the broad ligament, symptoms are more marked than as if it extends upward to the abdominal cavity, and particularly is this true if adhesions take place between the wall of the cyst and the walls of the adjacent structures. This pressure may take place upon the bladder, the uterus or the rectum, and when the tumor attains a great size, it extends upward and encroaches upon the abdominal viscera, some-

times extending far enough to compress even the thoracic viscera.

If the pressure takes place upon the rectum, the lumen of this important organ is decreased in size. As a consequence, difficulty is experienced in forcing the passage of the fecal material through it. Thus constipation results. Due to the excessive straining which is present when this condition prevails there is usually a dilatation of blood vessels at the lower end of the rectum and in the anal canal so that hemorrhoids as a rule develop. These hemorrhoids are not only the result of straining which is produced during the act of defecation, but are also the consequence of pressure applied upon the veins draining the lower part of the rectum, and a lack of mental impulses being supplied to these vessel walls.

If the pressure is forward upon the bladder, it serves to decrease the size of its cavity and as a consequence, the patient develops the symptom of frequent micturition. This because the capacity of the bladder is decreased and even when smaller quantities find their way into the cavity, the desire for micturition arises. If adhesions take place between the walls of the cyst and the bladder, and if this condition is followed by inflammatory changes occurring, in the tumor, this condition may be transferred to the wall of the bladder and produce inflammation here, provided there are the proper impingements upon the nerve fibers supplying the bladder wall. Then again, if the cyst becomes large, it may, by extending upward into the abdominal cavity carry the bladder and the urethra with it, so that the blood supply to these organs is materially interfered with. This, in itself, may give rise to a congestive cystitis.

If the bladder attains such a size and is located in such a position that it produces compression upon one or both of the ureters, the passage of urine from the kidney to the bladder is mechanically interfered with and hydronephrosis may manifest itself. This hydronephrosis may, in turn, give rise to

the development of a pyelitis, dependent upon the character of the urine, which is formed and upon the degree of pressure which exists in the nerve fibers supplying the pelvis of the ureter. If these nerve fibers are impinged so that there is an excessive expression of calorific impulses, then the substances which are contained in the urine serve to act as an irritating agent to the epithelial tissue forming a lining membrane and as a result, inflammation is apt to manifest itself. If the pressure is upon the veins draining the kidneys, symptoms of albuminuria may manifest themselves.

If the cyst attains sufficient size that it extends into the abdominal cavity, it serves to displace to a greater or less degree practically all the abdominal viscera and thus it serves to affect their function. Various forms of gastro-intestinal symptoms may manifest themselves, but principal among these are nausea and vomiting. Associated with this condition, there is a loss of appetite and the general digestion is usually affected. Symptoms of jaundice may manifest themselves if mechanical pressure takes place upon the lymphatic or the common bile duct, because in this event there is not the proper passage offered for the expulsion of the bile into the intestinal canal. Finally the tumor may develop in such a way that it produces pressure upon the small intestines at a point where a sharp turn is made in the gut and this pressure may give rise to an intestinal obstruction, which may be either partial or complete and upon the degree of this obstruction, depends the severity of the symptoms which are manifest from it.

When the cyst is extremely large and fills the abdominal cavity, it presses the abdominal viscera upward as well as forward, so the anterior abdominal wall is distended and so that the diaphragm cannot attain its maximum degree of contraction. In these events the viscera of the thorax are pressed upon and the symptoms may become extremely distressing to the patient if the pressure is severe. Dyspnea manifests itself

due to the inability of the diaphragm to descend to its normal extent. As a consequence, the thoracic cavity cannot be made to produce a vacuum for the inhalation of the normal quantity of air. The heart action is also irregular, dependent partly upon the inability of the lungs to properly function and partly upon the direct pressure which is expressed throughout the entire thoracic cavity and which affects the heart substance as well as the other thoracic viscera. The lower part of the lungs is usually inactive, due to the inability of the diaphragm to properly function and as a consequence of this inactivity it is not uncommon to discover an effusion of serum into the pleural cavity in this particular location. If the cyst is extremely large and forces the diaphragm upwards to a marked degree, the lower ribs are forced outward and forward so that the spaces between them are somewhat increased.

Ascites is a common occurrence when the cystic tumor develops to such a degree that it compresses the vena cava or the iliac veins or any of the other great vessels which drain the pelvic or abdominal regions. If only the iliac veins are compressed, oedema of the lower extremities is the only manifestation, but if the vena cava is affected by pressure, the general ascites as well as oedema is present and there is a marked enlargement of the lower extremities as well as the abdominal cavity. The abdominal wall in these events shows a marked protrusion to the anterior and because of this protrusion, the structures composing it are spread out so that they show a very thin retaining structure. The veins which lie in the abdominal wall are dilated and the pigmentary zones are a common occurrence.

Pains are common symptoms in cysts of the ovary and their extent, as a rule, depends upon the extent and the character of the cyst which is present. There are bearing down or dragging pains in the iliac region which usually radiates from here into all parts of the pelvis and into the hips and thighs. It is not uncommon in this condition for headaches to manifest

themselves and when they are present, they are usually located in the occipital or vertical region.

Disturbances in the menstruation are more common in those tumors which develop as intraligamentous growths and which extend downward into the pelvic region rather than upward into the abdominal cavity. In the former case they are more apt to produce compressions upon the veins draining the uterus and as a consequence, they produce congestion here which expresses itself in the form of menorrhagia. Also this continued compression on the veins draining the uterus, gives rise to the expression of leukorrhea between the menstrual periods. Even in women who have passed the menopause, hemorrhages from the uterus are not an uncommon occurrence, but they do not manifest themselves, unless there is a marked degree of compression on the veins draining the uterine wall. Particularly are menstrual disorders apt to manifest themselves if the cysts are bilateral in character, thus offering compression on the veins draining both sides of the uterus so that a collateral circulation may not be developed. Amenorrhea is apt to manifest itself in the later stages of the disease and it is due to the destruction of the ovarian tissue which is associated with the cyst. When the ovary is destroyed so that its functions cannot longer be performed, there is no longer the necessity for menstruation in the uterus to prepare its wall for the reception of the ovum where it may possibly be impregnated. Although the menstrual flow is the result of structural changes taking place in the uterine wall, it is almost invariably found to be dependent upon the functional activity of the ovaries. If the function of these organs is destroyed, Innate, as an adaptative measure, discontinues the process of menstruation because there is no longer the necessity for it. Another reason why amenorrhea may exist in cyst of the ovary is that in the later stages of the disease when the pathological condition becomes so extensive as to affect the general health of the patient, the entire system

becomes depleted and weakened, and amenorrhea manifests itself as an adaptative measure introduced by Innate, to conserve as much as possible all the vitality of the body. Dysmenorrhea does not often manifest itself and is found to exist particularly in those tumors which are small and have developed between the layers of the broad ligament in such a position that they totally or in part occlude the cervix of the uterus or the lower part of the main cavity. When this occurs, difficulty is experienced in forcing the blood which has been given off from the uterine wall through the cervical canal and into the vagina, and if this condition does manifest itself, pain is the result of the contractions of the uterus in attempting to expel the dammed up material.

When an ovarian cyst is present, it is seldom that the individual becomes pregnant. This because of the displacement of the pelvic organs in such a way as to prevent the escape of the ovum into the Fallopian tube and its ultimate passage into the uterus where it may undergo impregnation. Pregnancy is less apt to occur where both ovaries are affected than where only one is involved and this is not only due to the abnormal position of the tissues of the pelvis, but also to the abnormality in the structure of the ovary which serves to destroy its function to a greater or less degree. Rare cases have been reported, however, where impregnation took place even when dermoid or papillary cysts were present in both ovaries.

The general symptoms which manifest themselves do not, as a rule, occur early in the disease. This, unless the tumor develops between the layers of the broad ligament and is so located as to produce such severe pressure symptoms that the pain is extremely marked. In these instances, the patient is distressed continually by the presence of the pelvic pressure and loses much sleep. These continual pressure symptoms also serve to produce mental depression in the patient, which, together with the lack of rest tends to rapidly deplete the

strength so that a rapid emaciation manifests itself. As soon as the cyst attains a sufficient size that it extends into and compresses the abdominal and thoracic viscera, the general health of the patient becomes markedly affected and a rapid emaciation and loss of strength is expressed. This compression serves not only to disturb the entire digestive mechanism by direct pressure upon the organs of digestion, but it also serves to affect the function of those organs which lie in the thoracic cavity and which are absolutely essential to the health of the patient. The lungs must be able to properly function in order that the proper amount of oxygen may be taken up by the blood and transferred by it to various parts of the body. It is also necessary that the heart action shall not be interfered with in order that this oxygenated blood may be propelled with the greatest degree of efficiency to those organs and tissues of the body where it is utilized. The facial expression of the patient in the latter stages of the disease is characteristic and is commonly known as the "facies ovariana" and is a rather pinched expression due to the extreme bodily exhaustion and the loss of sleep, together with constant suffering. In the later stages of the disease there is a loss of appetite and the tongue becomes dry and hard with a slight degree of stomatitis manifesting itself. A constant and persistent nausea and vomiting manifest themselves in the later stages of the disease.

One of the most common changes which occur in an ovarian cyst is that of inflammation and it is usually the result of impingement on the calorific and secretory nerve fibers supplying the cystic wall, as well as the extension into the cyst of toxic materials from the bladder, the intestines, the Fallopian tubes or the appendix. Of these structures, the Fallopian tubes and the intestines are more apt to give off toxic material, which, by extending through the intercellular channels, act as irritating substances on the inner wall of the cyst. Pelvic tumors, which are small, and which have formed adhesions are

more apt to undergo inflammatory changes than are large abdominal cysts, because the former are in more direct contact with the rectal wall from which toxic materials may be transmitted. In the abdominal tumors the wall of the cyst is usually removed from the rectum, the bladder and the tube, so that the only source of infection is found in the intestinal coils with which it comes in contact and as the movement of the food, through this canal is more rapid than in the rectum there is not as great a possibility of the absorption of toxic materials, whereby the surrounding structures may become involved. Statistics show that dermoid cysts are subject to inflammation more commonly than are the other forms of ovarian cysts.

Adhesions and the formation of suppurative material within the cystic tumor are the most common and the most serious results of inflammation. The inflammatory changes serve to produce large quantities of serious material which, because of the pressure under which the fluid is held when large quantities of it are formed, is forced through the intercellular channels to the outer wall where the fluid elements are very largely absorbed, due to the excessive heat. This leaves principally the solid material which ultimately undergo organization and form connection with the surrounding tissues. The degree of adhesions depends upon the degree of inflammation and the degree of expression of expansion impulses. If this expression is slight, there will be few connective tissue corpuscles formed and consequently, the adhesions will not be extensive. If, on the other hand, the expansion impulses are expressed to a marked degree, the involvement will be manifest on practically all the outer surface of the cyst so that severe adhesions are formed on practically all surfaces of the cystic neoplasm. Suppurative changes occurring in the cystic tumor which is unilocular, serves to infect all the fluid which is contained in the cyst, but if the tumor is a multilocular one, only one of the lobes may be affected. Even here,

however, there is the possibility of the extension of the suppurative material, through the intercellular channels, from one small cyst to another, so that ultimately they may all contain suppurative material.

Where suppuration exists in a cystic tumor, the adhesions which are formed are extremely extensive. There is always the possibility of suppurative cysts rupturing into the peritoneal cavity, the uterus, the bladder or the rectum, and when this does occur, any of these surrounding structures may become involved with inflammatory changes. This, however, is only true when there are nerve impingements existing which serve to increase resistive power of the mucous membranes lining these cavities. If the calorific impulses and the expansion impulses are in excess and if the secretory impulses are also expressed to a marked degree in the tissues with which the toxic materials come in contact, then inflammation is very apt to manifest itself. Very often the chemical activity of materials contained in the cyst, serve to produce a gaseous distention and a marked increase in size in the cystic neoplasm.

When the cystic tumor begins to undergo inflammatory changes, there is a rapid increase in size, due to the greater activity of the secretory cells forming the lining membrane, and the pain is also materially increased. Upon palpation it is found that the growth is very tender. The temperature is increased and the pulse is more rapid and somewhat weak. This is due to the compression which takes place upon the abdominal viscera, while the increase of general temperature is the result of the excessive manufacture of toxins and the inability of the excretory organs to carry those toxins away. There is a loss of strength and weight due to the accumulation in the body of toxic materials which cannot be eliminated and also due to the large quantities of nutritive materials being taken up by the enlargement of the cystic tumor. The kidneys may become involved during these inflammatory changes and it is not uncommon for an acute nephritis to manifest itself.

This is because the toxic materials accumulate in the tissues of the kidney, while this important organ is striving to eliminate them. It is impossible, however, for the tissues of the kidney to perform all the work which is required of them because the materials which are excreted from the body are formed so rapidly. As a consequence of the deposition of the toxic materials in the substance of the kidney, this organ becomes involved, also, with inflammatory changes.

If suppuration does not occur, during the inflammation, the symptoms are not so marked and are more apt to resemble those of local peritonitis rather than being manifest in the more severe form. It is only when the inflammation becomes general in the peritoneum or suppurative in a large cystic tumor that the pulse rate is increased and the temperature raised. Also where suppuration does not occur, the marked general symptoms of septic infection do not manifest themselves and the extreme symptoms of emaciation and exhaustion are not present.

Hemorrhages may occur into an ovarian cyst and give rise to a dark chocolate color in the fluids which are already present. It is seldom that a hemorrhage occurs into the cyst, unless some mechanical obstruction develops to prevent the proper drainage of blood from the cyst, and this is most often produced by pressure upon the pedicle by which the cyst is attached. In papillary cyst of the ovary, however, it is not necessary for any torsion or compression to be made upon the vessels draining the tumor and this, because the papillae which develop on the inner surface are very soft and friable in character and possess blood vessels which lie extremely close to the surface. Then again, these papillary outgrowths are very often the symptom of secondary degenerative changes which serve to produce abrasions of the vessel walls and thus allow for the escape of blood into the cystic tumor. Ulcerative degeneration in any form of cyst may produce hemorrhage and the degree of hemorrhage here, as in other diseases, where

blood vessels are ruptured, is dependent upon the character and size of the vessel involved. If the hemorrhages are slight, there are no particular symptoms manifest from them, but if they are extensive, a rapid decrease in temperature and other characteristic symptoms of shock will manifest themselves. It is seldom that extensive hemorrhages occur, but slight hemorrhages are not an uncommon manifestation.

If the pedicle by which the cystic growth is attached, becomes twisted, various symptoms may become apparent. If the tumor extends into the abdominal region, it is subject to the activity of the abdominal tissues and as a consequence, the cyst may become rotated, due to the peristaltic action of the intestine. Then again, if the tumor lies in contact with the rectum, the passage of the fecal material through this structure may serve to produce a rotation of the cyst and thus twist its pedicle. If the tumor extends toward the anterior and is in contact with the bladder, the alternate enlargement and evacuation of this cavity serves to produce an alternate movement which may twist the cyst. If a secondary tumor is developed on the upper wall of a cystic growth, and if it becomes large enough to make the cyst top heavy, it serves to rotate the tumor by assuming a lower position in the pelvic or abdominal cavities and thus the pedicle is twisted. It must be borne in mind that twisting of the pedicle by which the cyst is attached cannot take place unless the growth is free from adhesions, because if these unusual conditions are present it would be necessary to alter the position of all the surrounding organs in order for the ovarian cyst to change its position. Naturally it is easier for small cystic tumors to produce rotation and consequent twisting of the pedicles by which they are attached, than it is in the case of large tumors, because in the latter they become more and more distorted in shape, due to the pressure which exists between them and the organs with which they come in contact. Ovarian cysts are more apt to be rotated if they are of the dermoid variety than in any of

the other types and for this reason, twisting of their pedicles is more frequent.

The rotation of the growth and the twisting of the pedicle may be either rapid or slow, dependent upon the factors which are productive of the alteration. In those cases where the twisting takes place gradually, Innate is able to produce an intellectual adaptation which serves to decrease the severity of the condition. The blood vessels supplying the cyst through the pedicle become slowly constricted, which ultimately results in the manifestation of a passive congestion. This passive congestion may become severe enough that slight hemorrhages will occur on the inner surface of the cyst. Under these conditions the fluid which is contained, becomes of a dark chocolate color, due to the mixture of this blood.

Innate also is able to produce adhesions in those forms of rotation which take place slowly and as a consequence, the further constriction of the pedicle by twisting is eliminated. As these adhesions are formed, they eventually give rise to the extension through them of blood vessels, whereby the wall of the cyst derives much of its nutritive and oxygen supply, so that at a later date, even though the pedicle becomes completely severed, the tumor is still possessed of attachments whereby it may continue to grow. Occasionally the rotation of the cyst and the consequent occlusion of the vessel which takes place in the pedicle serves to entirely or materially cut off the blood supply and the drainage so that fatty degeneration occurs or some other form of disintegration, wherein the tissues of the ovarian cyst become completely absorbed and the growth ultimately disappears. Cases have been known wherein an ovarian cyst was present in the pelvic or abdominal cavity without possessing any attachments with surrounding structures. In these events, however, the cyst has just broken its attachments, as it could not long exist and continue to grow without being supplied with blood vessels, serous fluid and nerves. If a tumor is found in this condition, it will

soon undergo secondary changes whereby its tissues will become destroyed and complete normality again supervenes. A slow torsion of the tumor is more apt to occur in large growths than in small growths. The attempt of the cystic tumor to undergo rotation while it is adherent to the small intestine, may produce partial or complete occlusion of the alimentary tract where the attachment has taken place. The degree of rotation depends upon the activity of the structures with which the cyst is in contact and upon the length of the pedicle by which it is attached. If the pedicle is long and if the organ or organs with which the tumor is in contact are extremely active, the pedicle may become twisted through ten or twelve complete rotations, while if the pedicle is short and if the surrounding organisms are less active, it may be only twisted a part of one complete turn.

If the torsion occurs rapidly, symptoms which will manifest themselves, are usually grave. The blood vessels, occupying the pedicle by which the cyst is attached, become completely or almost completely occluded and the tumor becomes engorged with blood and extremely oedematous. This rapid interference with the blood supply and drainage system of the tumor may be productive of gangrenous alterations which are rapidly followed by a general peritonitis which is very apt to end in the death of the patient. There is usually the loss of large quantities of blood when the vessels draining the cyst are suddenly occluded, and this rupture is more apt to take place from the veins than from the arteries, because of the lesser pressure to which these vessels are ordinarily subject. This loss of blood is apt to be extremely marked and produce even the symptoms of shock or those of an acute anemia. Sometimes the rupture of the vessels are so extensive that the fluid in the ovarian cyst is subject to great pressure and may rupture into the peritoneal cavity. When this occurs, profound symptoms of shock are apt to manifest themselves and it is probable that death will supervene. The most constant

symptom which is present during slow torsion of the cystic tumor is that of a dull abdominal pain which does not alter a great deal in severity, even after it has existed for several months. Where there is a rapid torsion of the tumor, the symptoms are extremely marked and are manifest by a sudden and rapid enlargement of the tumor, together with very severe abdominal and pelvic pains, associated with nausea and vomiting. There is also a weak pulse manifest because of the loss of blood and a rapid fall in the temperature, associated with an extreme weakness of the patient. If the rupture is extensive and if the wall of the cyst breaks through into the abdominal cavity, the symptoms of peritonitis are very apt to manifest themselves.

Rupture of an ovarian cyst into the surrounding cavities may be due to an increase in the pressure in the cyst and a consequent over-distention of the wall. Secondary changes occurring in the wall of the cyst may also be a causative factor in the production of rupture, and perforation of the wall by some external agent or perforation due to the existence of a papillary growth in a papillary cyst may be given as a causative factor.

If the fluid contents of the cyst is greatly increased, and if this increase takes place rapidly so that adaptative alterations may not be made in the wall, to allow for the retention of the contained fluids, then these walls become extremely thin and are very susceptible to the pressure which takes place from within. Finally, we must consider the possibility of over-distention due to the rupturing of blood vessels contained in the cystic wall. This is perhaps the greatest factor in the production of rupture from over-distention.

Degenerative changes taking place in the wall, either of the fatty character or due to inflammation, suppuration or gangrene, serves to tear down the tissues which constitute the wall and ultimately produce such a degree of weakening that the contained fluids may easily make their escape. Perfora-

tion is more apt to occur in papillary cysts of the ovary than in any other form and here the escape is not due to secondary changes occurring in the wall, but rather to the natural weakness of that part of the wall where the papillae are present, this because the tissues of which the papillae are formed are very soft and friable and are easily subject to separation.

If there is a rupture of a multilocular cyst only a part of the contained fluids make their escape, because there is no communication by large channels between the many small cysts which constitute the multilocular tumor. If a unilocular cyst is ruptured, however, all the fluid which it contains makes its escape into the surrounding cavity and if this fluid is non-suppurative, it may undergo absorption and the cyst may never again fill with fluid. When this occurs, the wall of the cyst undergoes depletion and the products of the degeneration become gradually absorbed and eliminated from the body. Usually, the rupture of a cyst is associated with a hemorrhage which is not often profuse, because the point at which the perforation is made discloses a thin wall which possesses comparatively few and small blood vessels. Wherever very severe hemorrhages develop, it is almost always the result of rapid rotation of the cyst and consequent occlusion of the blood vessels which drain it.

If the rupture in the cystic wall is severe and if the fluid contained in the cyst is purulent in character, a general peritonitis is apt to develop, while if the rupture is small and if the contained fluids are non-irritating in character, they are usually readily absorbed and eliminated by the excretory portions of the body. They are more easily eliminated if they are fluid in character than if they are of a more solid consistency. The mucoid or colloid substances are usually irritating to the membranes with which they come in contact and are productive of inflammatory changes while if masses of the papillomatous growths are carried out from the cyst to the surrounding structure, they are apt to find lodgement there and

if the nerve fibers supplying those tissues with which they come in contact are impinged, they may give rise to excessive growth in the tissues in which they find lodgement. Occasionally the muroid or colloid substances undergo organization and give rise to the formation of minute yellow or gray nodules which are scattered throughout the entire abdominal and pelvic cavity.

It is rare that an ovarian cyst ruptures into the intestine, stomach, the uterus or to the external through the abdominal wall, but it is comparatively common for them to force an opening into the peritoneal cavity, the bladder, the rectum or the vagina. This rupture is the result of a lack of motor impulses in the cystic wall which allows for the perforation into the surrounding cavities and the same subluxation usually impinges the reparatory fibers leading to these structures, so that they cannot properly supply reparatory impulses to the tissues which are involved by the rupture. It is seldom, therefore, that the opening which is made forms a cicatrix which serves to again occlude the cyst from the cavity with which it has established a communication, and thereafter there is almost a continuous discharge of the cystic contents into the hollow viscus. Occasionally, if the rupture is made into the intestinal tract, the formation of intestinal gases is noted in the cyst, because these gases make their way into the cavity of the tumor and upon compression the enlargement gives a tympanitic sound.

The symptoms which are manifest upon rupture of the cyst into the surrounding structures are variable, and depend upon the character of the cyst and upon the quantity of the fluids which make their escape.

The sudden development of pain in the abdominal region is a symptom in all cases of rupture, but it varies in degree, being in some events acute and agonizing, while in other events, it gives rise merely to an uncomfortable sensation ex-

pressed by the patient as a feeling of something having given away or broken in the abdominal or pelvic region.

Extreme activity of the kidneys in expelling fluid within the first ten or twelve hours following the sudden appearance of these pains is indicative of the fact that Innate is adapting herself to the changed conditions and is eliminating, as rapidly as possible, the fluids which have been thrown into the peritoneal or abdominal cavity. This is providing the activity of the kidneys is somewhere near the normal degree and the cells of this important organ are able to absorb in a large measure the fluids which are carried to them. If large quantities of fluids are discharged after the rupture of an ovarian cyst, it is usually indicative of a unilocular growth having existed, but if only a small quantity is discharged and if a tumor still manifests itself upon palpation, the conclusion is logical that the growth is a multilocular one.

The rapid change in the size of the abdomen and the disappearance of a heretofore apparent enlargement together with a condition of flabbiness in the abdominal wall is indicative of a rupture in the cyst. This, however, providing the cyst is a unilocular one, because if it is multilocular, only a part of its contents makes its escape; although even in this latter form, the size of the enlargement may be materially decreased.

In those cases which have not been distinguished by the presence of ascites and where there suddenly appears a large quantity of fluids freely distributed throughout the abdominal cavity, the indication is that a rupture has been made through the wall of a cystic tumor. Inflammation of the peritoneum develops, as a rule, within a very few hours after the rupture of a tumor providing the fluids contained are septic in character. If, however, no symptoms of inflammatory alterations manifest themselves, it can be reasonably concluded that the fluids which have been discharged are simple.

If the patient discloses a history of a previous growth

which has suddenly disappeared and wherein there had been large quantities of fluids discharged from the kidneys, immediately following the disappearance of the tumor and if the history also includes the formation of a secondary growth, usually slow in its development, it can be safely assumed that a cystic tumor has been present which has ruptured and in which fluids have later re-accumulated.

Adhesions between ovarian cysts and the surrounding structures may be the result of inflammation wherein the fluids have escaped to the outer surface and there have undergone organization or these adhesions may be the result of constant friction between the outer wall of the cyst and the surrounding structures, so that the epithelial cells forming the covering have been destroyed and the connective tissue cells are thereby exposed to contact with the surrounding organ. In this latter event, if the function of excessive expansion is manifest in these connective tissue cells, they send out branches or pedicles in various directions and form a direct communication with the adjacent tissues. The adhesions vary in degree, being very extensive in some cases, while in others they are only slight. They are more apt to be extensive in cases which result from suppurative inflammation, than in those which are the result of contact between the outer surface of the cyst and the surrounding organs. The symptoms of intestinal obstruction developing during the course of an ovarian cyst is usually indicative of adhesions being formed between the wall of the cyst and the wall of the vessel, wherein pressure is made on a section of the duct where a kink already exists. The fact that a tumor is freely movable is not indicative, necessarily, of the absence of adhesions, because if these adhesions are formed with the peritoneum, there still may be present a great degree of movability because of the wide range of position which the small intestines are able to assume. On the other hand, a cyst which is comparatively immovable is

usually indicative of adhesions having been formed between it and the pelvic structure.

Care should be taken not to confuse an ovarian cyst with a case of pregnancy. One of the most important distinguishing factors to be considered in determining whether the enlargement is the result of pregnancy or of a cystic tumor is the factor of time which should always be considered. The objective symptoms of pregnancy should always be borne in mind and the possibility of conception having taken place in the patient may be a conclusive feature. The areola around the nipple which occurs in case of pregnancy is not always distinctive, as it sometimes is present in cases of cystic tumor. Then, too, the breasts often become enlarged in both conditions and frequently a definite flow of milk is established in cystic tumor as well as in gestation. The digestive symptoms of nausea and vomiting are present in both conditions, but in pregnancy they occur very early while this is not true where a tumor is present. Further, the nausea and vomiting of pregnancy are not associated with a loss of weight and a general impairment of the health. Amenorrhea is commonly associated with pregnancy, while in ovarian cysts it is an exceptional condition and seldom occurs before a general emaciation of the patient manifests itself. This sign, however, is not conclusive and too much credence should not be placed in it.

Recognition of the fetal heart sound and the palpation of the abdominal region to determine the shape of the enlargement are the most distinctive and reliable features which should be considered. If the pregnancy is well advanced, the fetal heart sounds are distinguishable and all question as to the cause of the enlargement is thereby settled. The palpation of the abdomen and the determining of the outline of the foetus is absolutely distinctive and this method also eliminates all question of the cause of the enlargement if the general contour of the fetal body can be felt. Movements of the foetus establish without a doubt, the existence of pregnancy. Varia-

tion in the size of the tumor is usually present in cysts of the ovary while this fluctuation is not present during pregnancy.

The distinction can be made between ovarian cysts and a gaseous distention of the abdomen by palpation, wherein the cystic tumor undergoes very little alteration in position while a gaseous distention can be made to completely disappear by firm pressure.

The growth of a cyst on the kidney should not be confused with an ovarian cyst. In the first place a cyst of the kidney possesses a slower growth than one on the ovary and extends downward rather than upward, as in the latter case. Inspection discloses the fact that the abdomen is not symmetrical and hard in a cyst of the kidney and that there is a bulging over the region where the kidney is found. Further, if there is any abdominal distention at all, it is in the upper part of the abdomen rather than in the lower abdominal and pelvic region, as in ovarian cyst. Upon palpation it is found that the renal cyst is deeply situated in the abdomen and more or less firmly attached; also that it fills in the posterior part of the abdomen in such a way that the secondary curve here in the spine is almost completely eliminated. On the affected side, the percussion-note which is given off is very dull, while on the side which is not affected it is resonant. It must further be remembered that in renal cyst the dull area is completely surrounded by a zone of tympany which can be determined upon percussion. An ovarian tumor is surrounded by a zone of resonance but the area which gives off a dull sound upon percussion extends completely to the arch of the pubes while in renal cyst there is usually an area between the cyst and the pubes where a zone of tympany exists.

Care must be taken to distinguish ovarian cysts from a fibro-cystic tumor of the uterus. In the former event the outline of the uterus can be distinguished by abdominal palpation and it is usually regular in size and shape, not being filled with nodular deposits as is the case in fibro-cystic tumor of the

uterus. In this latter disease there can be no distinction made between the body of the womb and the tumor itself, because the two are intimately associated, the one being adherent to the other.

A general ascites may occasionally be difficult to distinguish from an ovarian cyst, particularly when the cyst develops to such a size that it extends into the abdominal region, crowding aside the abdominal viscera and pressing upon those viscera contained in the thoracic cavity. It is also difficult to distinguish the two conditions when they co-exist. This usually occurs only in those ovarian cysts which attain a great degree of size and which allow for the escape of large quantities of fluid into the abdominal cavity.

Ascites is usually associated with a history of a pre-existing disease of the heart, the liver or the kidneys, while no such history is apparent in ovarian cysts. Furthermore, the general health of the patient is usually involved before the enlargement due to ascites is apparent, while in ovarian cyst it does not disclose the symptoms of general affection until after the enlargement has become apparent. In ascites the enlargement of the abdomen is more or less regular in contour, from the very beginning, while in the ovarian cyst the enlargement occurs first upon one side and develops from here until finally the entire abdominal cavity is involved.

Upon inspection it is found that when the patient assumes the erect position the enlargement due to ascites is irregular and symmetrical, while this is not true in ovarian cysts except when the enlargement is in the latter stages. When the patient assumes the recumbent position the abdomen becomes more or less flat, with a bulging in the region of the loins when ascites is present and there is little prominence displayed below the umbilicus. In ovarian cyst, on the other hand, the abdomen retains its prominence even when the patient assumes the recumbent position, there being no bulging between the loins, and the enlargement is manifest below the level of

the umbilicus to a greater extent than above. In ascites the lower abdomen becomes prominent when the patient assumes the upright position, while in ovarian cyst the general shape of the abdomen is not altered in the event the patient changes from the recumbent to the erect position. In ascites the umbilicus is apt to bulge, while in ovarian cyst this never occurs. Finally, if the patient assumes one side or the other, while in the lying position, the shape of the abdominal cavity varies, being more prominent on the lower side, while the position of the abdomen changes very little in ovarian cyst.

Upon palpation it is found that the enlargement due to ascites, offers very little resistance, while that of ovarian cyst offers a marked resistance. In ascites there is a general enlargement but no specific region, wherein a distinct tumor can be felt while in ovarian cyst this tumor can be easily outlined. In ascites the shape of the abdomen is changed when pressure is applied, while this cannot be accomplished when ovarian cyst is present. Upon palpation the fluctuation is general in ascites and extends throughout the entire abdominal region, being more or less extensive, while in ovarian cyst, the fluctuation is limited and the area of fluctuation is constant, no matter what position the patient assumes.

Upon percussion it is found that the areas of dullness and resonance vary as the patient assumes different positions, while this is not true in ovarian cyst. In ascites the area of dullness extends higher when the patient is in the recumbent position than when in the erect position, while in ovarian cyst this variation is not present.

Although several forms of degeneration may occur in cyst of the ovary, the most common are those of fatty, myxomatous and calcareous degeneration, while malignant changes are of rare occurrence. Malignant changes are, however, more apt to manifest themselves in papillary cysts than in the other form of ovarian cystic tumors.

Prognosis—The prognosis of these various forms of

tumor is entirely dependent upon the reduction of the causative subluxation and upon the length of time required by Innate to repair the damage which has been done in the structures which are involved. Glandular cysts develop more rapidly than any other form and usually produce symptoms which are dangerous to the life of the patient if not brought immediately under the care of the Chiropractor. The recovery is more rapid in those events where structural changes have occurred in a minor degree. If adhesions have been formed, it does not necessarily preclude the possibility of restoring the patient to normal health, but the length of time required is usually longer than as if adhesions had not been formed.

Dermoid cysts are much slower in their development than are the other forms and they do not necessarily produce symptoms which are dangerous to the life of the patient. The greater danger from these tumors lies in the development of inflammation in their walls which may become extended to surrounding structures. If, however, adjustments are given which serve to produce normality in the lumbar region, the possibility of inflammation is eliminated.

The papillary cysts, although they do not develop as rapidly as the glandular variety, are dangerous to the life of the patient insofar as a rupture is apt to be made through the wall of the cyst in those locations where the papillae are developed. This condition always gives rise to the possibility of rupturing a large blood vessel, in which event death is apt to supervene, being preceded by the symptoms of collapse. If, however, adjustments are given in any of these incoordinations, the excessive secretion is eliminated and the walls of the cysts are made strong enough to withstand the pressure from the internal so that there is no possibility of the involvement of the surrounding structure.

The cystic tumor may disappear in one of two ways under adjustments: The most common manner of its disappearance is that the fluids are not manufactured which serve

to keep the cavity filled, and as a result, the tumor gradually decreases in size. Finally the walls forming the limiting membrane for the fluid become disintegrated and are absorbed and carried away through the excretory channels of the body. On the other hand, the cyst may rupture and allow for the escape of the fluid into the peritoneal cavity, whence it is absorbed and carried away from the body through the kidneys. When this latter condition prevails, the cystic walls which remain undergo disintegration and the tissues of which they are formed are finally absorbed and cast off from the body. Although the latter mode of disappearance is more rapid than the former, it is less common in occurrence.

Parovarian Cysts

Definition—As the name indicates, this is an incoordination produced by the accumulation of fluids in one or more parts of the parovarian.

In General—To thoroughly understand the manner in which the cysts of the parovarian may be formed, we must recognize the fact that the parovarium is a membrane consisting of two layers which is the backward extension of the posterior layer of the broad ligament to surround the ovary. That part of the posterior layer of the broad ligament which extends backward from its points of communication with the anterior layer and which ultimately surrounds the ovary is known as the parovarium. In the parovarium are a number of tubules which are the remains of those found in the Wolffian body of fetal life.

In the parovarium we find a plexus of tubes which are divided into four groups, dependent on their location and description:

1. The first group consists of those tubules which possess a blind extremity and which are unattached at their distal ends, being attached at their proximal ends to the paro-

varium and continues with the plexus which is found here. These are known as the Tubes of Kobelt or the outer tubes.

2. The second group consists of tubules which converge at and enter the paroophoron of the ovary and they possess closed extremities at the ovarian end while at their outer ends they empty into a transverse duct. These are known as the middle or the vertical tubules of the paroovarium.

3. The third group consists of tubes which in adult life are obliterated under normal conditions and which extend into the paroophoron, being present here as thin fibrous cords. These are known as the inner tubules.

4. The fourth group consists of a single duct which extends in a transverse direction through the paroovarium, lying in the layers of the broad ligament, and can be traced past the lateral border of the uterus, past the vaginal wall to a termination in the urethra. This duct is known as Gartner's duct.

Cysts of the paroovarium form two groups:

1. Those which develop in the outer tubes.
2. Those which develop in the middle tubes.

Cysts of the Outer Tubes

Definition—As the name implies, this is an incoordination characterized by the accumulation of fluids in one or more of the tubules of Kobelt.

Etiology—Subluxations at K. P. and at P. P. The incoordination is the result of an excessive expression of secretory impulses in those nerve fibers which supply the lining membrane of the tubules of Kobelt, together with a lack of excretory impulses supplied by those nerves which extend to the parynchema. It is seldom that this incoordination is associated with the excessive expression of calorific impulses, but when this condition does obtain the degree of enlargement

is more extensive than as if the other two impulses alone are abnormal.

Symptoms—It is seldom that any symptoms are manifest because the enlargement does not progress to a size sufficient to produce mechanical obstruction upon any of the surrounding organs. Ordinarily the cyst does not attain a size greater than that of a small bean and this being true, and the cyst having no firm attachment, it cannot produce pressure which is destructive to the function of the surrounding organs. Further, it must be realized that the tubules in which this particular cyst develops are free at their distal extremities so that the cyst is freely movable around the parovarium.

Prognosis—The prognosis under adjustment is favorable, although, as a matter of fact, the patient, not being aware of the existence of the cyst, seldom takes adjustments for this particular incoordination.

Cysts of the Middle Tubules

Definition—This is an incoordination characterized by the accumulation of fluids in those tubules found extending between Gartner's duct and the paroophoron of the ovary. This type of cyst is divided into two divisions known as the pedunculated and the sessile cysts.

Etiology of Pedunculated Cysts—Subluxations at K. P. and at P. P. This incoordination is relatively as unimportant as are the cysts of the outer tubes, because the symptoms which arise from them are unimportant from a clinical standpoint. The cysts themselves are never associated with the inflammatory changes and never attain a size sufficient to produce any distinctive symptoms. Developing as they do, from the middle tubules, they are the result of a lack of excretory impulses being expressed through those nerves supplying the kidneys and an excess of secretory impulses through those nerves supplying the tubule walls. Subluxation in the lumbar

region is also productive of a lack of motor impulses in the tissues of the parovarium surrounding the tubule which is affected and as a consequence, the tubule is allowed to project into the peritoneal cavity as a pedunculated growth. This cyst usually ruptures before it attains any degree of size and empties into the peritoneal cavity. Fluid which is thus discharged is absorbed by the peritoneum and ultimately discharged from the body, while the wall of the cyst remains as a fringe-like projection marking the former site of the enlargement.

Symptoms—There are no distinctive symptoms in this disease.

Prognosis—Prognosis is favorable under adjustments although the patient is not aware of the restoration of normality, because the degree of abnormality is not sufficient to have produced distinctive features.

Etiology of Sessile Cysts—Subluxations at K. P. and at P. P. The development of these cysts takes place in the middle tubules or in part or all of Gartner's ducts. The degree of pressure on nerve fibers supplying them determines their size and they are very often extremely large. Being commonly known as large cysts of the parovarium. The subluxations which produce them ordinarily occur during the child bearing period of the woman's life and are very seldom noted before puberty, although some cases disclose their existence after the menopause. The impingement takes place upon the secretory nerve fibers supplying the middle tubules and in such a way that there is excessive expression of secretory impulses in the lining membrane of the tubules. Further, there is a lack of excretory impulses expressed in the kidneys so that these organs allow for the accumulation of large quantities of fluid in those structures which are particularly susceptible, because of subluxations, to this incoordination. There may be a lack of motor impulses supplied to the vessel walls lying in the wall of the cyst or there may be excessive calorific impulses which

result in inflammatory changes and perhaps adhesions. These tumors may extend between the layers of the broad ligament, forcing the anterior layer to separate itself from the posterior one and when the enlargement assumes this position, it is known as an intraligamentous cyst. It may develop and extend beneath the peritoneum which surrounds the ovary, when it is known as a sub-peritoneal cypt.

It usually lies in close proximity to the uterus, the Fallopian tubes and the ovary. Very rarely does it possess a pedicle and then only when the tissues of the broad ligament which are in close proximity to it lose their tonicity, due to the lack of motor impulses being supplied them. This fact, together with the production of traction or elongation of these tissues serves to produce a pedicle which connects the cyst to the main body of the broad ligament or to the parovarium. The enlargement of the cyst serves to produce pressure upon the uterus which makes it assume a position on the opposite side of the pelvis from that occupied by the cyst. This serves to elongate the Fallopian tube on the same side which the cyst occupies to stretch it over the surface of the tumor. In some cases this pressure may be so severe and the tumor may be made to occupy such an abnormal position that the tube measures from twelve to fifteen inches in length. Although the tissues of which the tube is formed seldom undergo changes which alter the general structure, they do become increased in amounts so that the tube becomes longer and sometimes such a marked degree of pressure is made upon them that they become flattened and difficult to recognize.

The growth of this type of cysts is very slow and sometimes several years are occupied before it attains even an ordinary size. They are seldom more than five or six inches in diameter, but occasionally they assume a much greater size and extend into the abdominal region, pushing aside the abdominal viscera and sometimes produce pressure upon the organs of the thorax. They are almost always unilocular, al-

though several cases are on record which were multilocular. It is very rare for adhesions to form around this type of tumor because inflammatory changes seldom manifest themselves. The wall of the cyst is thin, translucent and possess a greenish color. Sometimes the wall becomes of a light blue color, and when this occurs it takes on a certain degree of opacity. It is very seldom that adhesions occur between the wall of the cyst and the surrounding peritoneum, but when this does happen the one membrane is firmly attached to the other so that their separation is extremely difficult. Because of the thinness of the wall, the cyst often ruptures and discharges its contents into the peritoneal cavity, where it readily undergoes absorption. It is very seldom that peritonitis occurs from this complication, because the contained fluids are simple in character. Occasionally fluid may reappear in the cyst but sometimes the walls of which it is formed become disintegrated and absorbed, being thrown off by the excretory channels of the body. Whether absorption of the wall takes place or whether a second cyst is formed depends upon the degree of subluxation which exists and the consequent ability of Innate to express herself in the affected organs. The fluid which is contained in the cyst is usually colorless and possesses a specific gravity of 1.002 to 1.008.

Sometimes a parovarium cyst may become papillomatous and in this event these minute projections are found distributed over all or a part of the inner surface of the cyst. When this condition exists, the walls are heavier and consequently more opaque than those which are found in the cysts which do not possess the papillary growths. In the papillary cyst also the fluid which is contained is more apt to become discolored, due to the presence of blood mixed with the contained serum. This, in turn, is due to the fact that the papillae are more or less loose in construction and friable, thus serving to limit the walls of the blood vessels to a lesser degree than

they are limited in the other form. This particular type of cyst is very similar to the papillary cyst of the ovary, and it may rupture and produce infection in the peritoneum in the same manner.

When papillary cysts of the sessile variety occur in the inner tubules of the parovarium, they may undergo several alterations. Impingement upon the nerve fibers which are productive of the expression of excessive calorific impulses, give rise to inflammatory changes and, although this condition is rare, when it does exist, and when the tumor does rupture, peritonitis is apt to supervene if the mental impulse supply to the peritoneum is not normal. Hemorrhage may occur due to the lack of motor impulses being supplied to the vessel walls of the cyst and when this condition intervenes, the accumulated fluids disclose a more or less dark color, due to the presence of blood. The degree of this discoloration depends upon the degree of hemorrhage, and this, in turn, is dependent upon the type of blood vessel and the size of the blood vessel which is involved. The cyst may undergo rotation, particularly if it becomes perunculated and when this condition exists, the vessels draining the growth are apt to become impinged and produce a congestion back in the vessels which lie in the cystic walls. Occasionally this pedicle may become constricted to such a degree that the cyst becomes entirely cut off from its point of origin when it probably undergoes disintegration, and the cells are absorbed and finally carried away by the excretory channels of the body. Rupture of the cyst is rare and when it does occur it may give rise to abnormal complications, but this is dependent upon the character of the food which is contained and the degree of impingement which takes place upon those nerve fibers supplying the peritoneum. Adhesions are also uncommon and depend upon the existence of inflammatory changes in the cyst and upon the supply of expansion impulses to the connective tissue cells of the cystic wall. If these expansion impulses are excessive,

the connective tissue cells undergo rapid development, sending out prolongations, which ultimately unite with prolongations sent out from connective tissue cells of surrounding structures so that the union is affected.

Symptoms—Due to the fact that the sessile cyst of the ovarium is usually more or less limited in its movement, due to the fact that it is developed between the layers of the broad ligament, it cannot move about and accommodate itself to the surrounding structures. It is for this reason that pressure symptoms are very apt to manifest themselves, although these symptoms are ordinarily limited to the organs of the pelvis rather than extending to those of the abdomen and the thorax. This because of the fact that the tumor seldom attains a size sufficient to cause it to extend outside the limits of the pelvic cavity. If the extension is toward the posterior, pressure may be manifest upon the rectum which results in a partial occlusion of this canal and a consequent developing of hemorrhoids. These hemorrhoids develop because of pressure upon the veins draining the lower extremity of the rectum and because of the constant straining during defecation which is necessary to expel the fecal material. If the cyst extends toward the anterior it is apt to produce pressure upon the bladder, which serves to decrease its capacity and thus to cause frequent micturition. Further, if this pressure is severe, symptoms of congestive inflammation manifest themselves in the wall of the bladder, resulting perhaps in the partial occlusion of the urethral canal. If the cyst extends toward the superior, it serves to produce compression on the kidneys or the urethra and thus may give rise to hydronephrosis or other severe renal disorders. If the cyst attains a great degree of size and extends into the abdominal cavity it produces pressure upon the coils of the intestinal tract, serving to produce an abnormality in its blood supply, and thus the symptoms of digestive disturbance manifests themselves. If the pressure is sufficient to force the abdominal viscera upward against

the diaphragm and thus to decrease the size of the thorax, cardiac symptoms may manifest themselves, or respiratory symptoms due to pressure. Asites is always possible, due to the pressure of the cyst upon the veins draining the pelvic and abdominal areas and oedema of the lower extremities may develop for the same reason. Pain in the pelvis, which may radiate to the abdominal region and to the lower extremities may develop and lumbo-sacral pains of a dragging character are not uncommon. All the pains which are present are due to mechanical pressure upon the organs with which the tumor lies in close proximity.

Among the earliest and most constant symptoms are those of monorrhagia, metrorrhagia and dysmenorrhea. The menorrhagia and metrorrhagia are the result of the obstruction to the veins draining the uterus and the consequent damming back of the blood into the plexis of this organ. With this marked congestion present and with subluxations existing in the lumbar region, which are apt to produce an abnormality in the motor impulse supply to the vessel wall, it is very probable that the excessive blood pressure will manifest itself by rupturing one or more of the vessels in the uterine wall where the affection is most profound. This is particularly apt to occur at the menstrual periods and be productive of monorrhagia because at this time the entire wall of the uterus is congested as are all the balance of the pelvic organs. Metrorrhagia may manifest itself if the lack of motor impulses is particularly acute and if the blood pressure is extremely hard, due to a marked occlusion of the drainage veins. Dysmenorrhea is a result of the congestion which occurs in the mucous membrane of the uterus and which serves to produce a distention of this mucous membrane so that when it occurs in the cervical canal it partly occludes that opening. It is very seldom that amenorrhea manifests itself as it does in ovarian cysts because in the latter case the development is very extensive and the growth assumes such proportions that

it is very apt to interfere with the digestive process to a sufficient degree to induce general loss of strength and flesh. In this event anemia is present and the general blood pressure is lowered, as a consequence of which the pelvic congestion which is ordinarily present during the menstrual period, fails to manifest itself.

Leukorrhea is also an early and a constant symptom and it is produced by the same abnormal condition that is productive of the menstrual period. The high blood pressure which is present in the uterine wall, due to the obstruction of the veins draining the uterus, serves to cause an infiltration into the uterine mucous membrane and the fluid which is thus thrown out between the mucous membrane cells is taken up by the secreting glands of the uterus which pass it on to the uterine surface, whence it is discharged to the external as a white, non-irritating fluid.

As has already been mentioned, one of the Fallopian tubes is distorted and elongated and in many cases flattened to such a degree that it is almost impossible to distinguish it. Thus there is a greater or less degree of occlusion in that particular Fallopian tube and this changed position precludes the possibility of the transmission of the ovum from the organ which secretes it to the uterine wall. Further, the uterine is so markedly displaced by the development of the tumor that it is forced to assume an extreme degree of flexion or version, whereby the vascular system is materially interfered with. This, together with the presence of the tumor serves to produce a congestive inflammation which makes the wall of the uterus untenable for the impregnated ovum.

As a rule, the health of the patient is not materially interfered with and the profound anemia and cachexia which are so apt to be found in ovarian cysts are not developed here. If there are any general symptoms such as the loss of strength and weight and a development of general debility, it is distinctly the result of the pressure symptoms which produce

mechanical interference with the functions of the organs in the pelvis and which produce pain which may ultimately terminate in a neurasthenia.

If any of the symptoms of complications arise, they should be considered merely as symptoms of those complications and not confused with those symptoms which are distinctive of cysts of the parovarium. These complications are in the form of inflammation, hemorrhage, twisting of the pedicles, if such exist, and rupture, but these complications are less apt to occur in cysts of the parovarium than they are in those which involve the ovary.

Prognosis—The prognosis under adjustments is favorable in any of the several forms of parovarian cysts which have been discussed but they are more favorable where the disease is not associated with the development of papillary growths in the walls of the cysts and where complications do not arise. It must be remembered that if these complications do arise, they are the result of a more severe degree of impingement and that they, as a rule, designate a greater degree of subluxation. When such is the condition, the ligaments of the spine have been stretched to such a marked degree they possess less tonicity to enable them to be utilized by Innate for the restoration of normality when the adjustment is delivered. There are, however, none of the complications which may arise that need prove any material obstacle to the final attainment of satisfactory results. As soon as the impingement is released, Innate is enabled to produce normality of function in the involved organs, so the healthy tissue in a short while replaces the abnormal tissue existing during the disease.

Varicocele

Definition—An incoordination characterized by the distention of the ovarian vein lying in the folds of the broad ligament.

Etiology—Subluxations at P. P. The disease is very often associated with the existence of a sub-involution and a consequent displacement of the uterus. Naturally, sub-involution is a condition which does not involve only the wall of the uterus but it includes also all the tissues of the pelvis which become enlarged during the gestation period and among these are the broad ligaments, the ovarian ligaments, the ovaries and the Fallopian tubes. The return of the structures to normal following the delivery is the result of a fatty degeneration which occurs in those organs which are enlarged and this is here a normal physiological process. If this degeneration does not occur, it is the result of impingements on those nerve fibers which produce an excessive manifestation of nutritive impulses or expansion impulses, or a lack of an expression of excretory impulses. All the blood vessels of the structures involved by enlargement during the gestation period are also enlarged and if, after the delivery, the other structures retain their former size, blood vessels also remain tortuous and dilated. Furthermore, displacement of the uterus is apt to occur as the result of a sub-involution. This serves to produce an abnormality in the size of the blood vessels of the pelvis and in certain areas they may undergo marked constriction due to traction or torsion upon them. If this occurs in one of the veins of the broad ligament it produces a congestion here which, together with the lack of motor impulses being supplied to the vessel walls, serves to produce a dilatation of that wall. The proximity of the rectum serves to produce pressure upon the veins of the broad ligament if there is any extreme dilatation of that cavity, such as is true in a stubborn constipation. This, in itself, however, will not produce the abnormality, but it must be associated with the lack of motor impulses being supplied to the vessel wall. Where there is an abnormality in the general assimilation of the body so that the function of the supra-renal glands is interfered with, there is a tendency for all the blood vessels in

the body to undergo relaxation, due to the absence of adrenalin. The lack of this important secretion has its effect in a general way upon all the blood vessels, but it is particularly noticeable in those vessels which lack the proper supply of motor impulses.

The condition of varicocele in the female is homologous to that of varicocele in the male, but it is much less common, due to the fact that in the female the veins lie in a horizontal position, while in the male they follow a perpendicular course. The enlargement of the vein depends upon the degree of impingement which exists in the lumbar region and the extent to which the lack of motor impulses manifests itself. Usually the disease varies so that the enlargement is extremely small, being a little larger than the normal vessel or it may assume a size equal to one and one-half inches in diameter. It is more apt to occur upon the left side because upon this side there is no valve placed in the ovarian vein and it empties approximately at right angles into the renal vein. Thus, it is subject to a greater degree of pressure than are the corresponding veins on the right side. Furthermore, the rectum lies on the left of the median line and any abnormality in the position of the pelvic viscera serves to compress the structures on the left side of the pelvis more readily than those on the right.

Symptoms—In many cases there are no symptoms which are noticeable, but this fact depends upon the degree of enlargement in the vessel. If the enlargement is severe and a distinct tumor is formed in the broad ligament, it may assume a position in the pelvis lower than the normal position of the vein and drag down the tissues of the broad ligaments so that they do not properly perform their function. The pain may be a symptom or not, dependent upon the degree of enlargement, but where it is present it is usually of a dull, dragging character and is centered in the region of the vascular enlargement. From here it radiates to all parts of the pelvis, but particularly upward to the region of the kidneys. The

pain being due to the downward drag of the enlargement, it is naturally more severe when the patient assumes the upright position and is relieved when the patient assumes the recumbent position. Any exercise or straining serves to increase the severity of the symptoms, while the constant assumption of the recumbent position gives the greatest degree of ease. In those cases where the pain is extremely severe while the patient assumes the upright position she may be forced to assume the recumbent position for long periods of time to obtain any degree of comfort and unless the proper adjustments are given to restore the tonicity to the affected muscle fibers, a condition of chronic invalidism results.

Prognosis—The prognosis is favorable and the length of time required should not be very great because there are no structural changes to be repaired and no tissues to be torn down and replaced by others. All that is necessary is to restore normality in the lumbar region so that Innate may properly supply the walls of the blood vessels with their normal quota or motor and other impulses, at which time the dilated vessel will again assume its normal size.

Solid Tumors of the Ovarian Ligaments, Broad Ligaments and Round Ligaments

It is found that in the ligaments of the uterus and appendages several forms of tumor of a solid character may develop, although they are not so common here as are cystic tumors. In the broad ligaments there have been discovered fibromata, lipomata, carcinomata and sarcomata. With the exception of the lipomata, these several tumors have been found also in the ovarian ligaments and in the round ligaments. They may develop as sub-peritoneal tumors or as intra-ligamentous growths, depending entirely upon their location. It will be unnecessary to enter into a lengthy discussion of the etiology in these events, except to state that

subluxations in the lumbar region and in some events at K. P. are the causative factors. These subluxations give rise to an excessive manifestation of expansion impulses and in some events to a lack of excretory impulses being supplied to the kidneys. In those cases where carcinomata and sacromata develop, there is also a lack of nutritive impulses and of reparatory impulses together with an excessive expression of calorific impulses. These conditions, associated with an excessive expansion, serve to produce abnormalities in the form of degenerative changes which may be extremely malignant in character. In these growths the same general structural changes take place as appear in the same types of tumors which have been thoroughly discussed under the diseases of the uterus. The symptoms are entirely dependent upon the degree of enlargement and in the case of malignant tumors upon the degree and rapidity of the secondary changes.

The prognosis in these tumors may be favorably compared with those which have been given under the same several forms of tumor in other organs, and are dependent very largely upon the degree and the extent of the involvement

Suppurative Inflammation of the Pelvic Connective Tissue

Definition—An incoordination in the connective tissue structures of the pelvis characterized by excessive manifestation of calorific impulses together with a lack of nutritive and reparatory impulses.

Etiology—Subluxations at K. P. and at P. P. Impingement upon the nerve fibers supplying the cellular elements of the pelvic connective tissues and which serve to produce a lack of nutritive and reparatory impulses and an excessive amount of calorific impulses are productive of severe inflammations which manifest themselves very largely by the accumulation of suppurative materials in the connective tissues and the

structures in close proximity. Of course, many of these infections may be the result of extension from suppurative inflammations, of the Fallopian tubes and the ovaries, associated with impingement on the nerve fibers supplying their connective tissues. It must be remembered, however, that this nerve impingement is in itself an essential feature and were it not for its existence there could be no secondary inflammation due to extension. Primary inflammation of the connective tissues of the pelvis is the result of direct impingement upon the nerve fibers supplying them, without the condition being preceded by suppurative inflammation in any of the surrounding organs. This primary inflammation is not as commonly met with as is the secondary form, due to the fact that there are no toxic materials to come in contact with the weakened tissues and act as irritative agents to them.

Primary suppurative inflammation of the connective tissues usually originates following injuries received during childhood. The raw surfaces which are the result of these injuries are subject to toxins coming in contact with them, and these, together with the presence of subluxations, produce inflammatory changes. Particularly is this apt to occur in lacerations involving the peritoneum or the cervix, or in traumatic conditions involving the vault of the vagina. Occasionally the condition is preceded by a septic endometritis wherein the toxic materials are transmitted, through the lymphatic vessels which originate in the wall of the uterus and make their way to the broad ligaments. Further, suppuration in cystic tumors or in any other form of neoplasm involving the pelvic organs, may give rise to the transmission of septic material through the lymphatic channels in the walls of which they become lodged and act as irritating factors.

As the result of the suppurative inflammation, pus is formed in the substance of the connective tissues and thrown out into the intercellular channels which exists in these structures. From here it is absorbed, as it is manufactured in

only small quantities, but if the manufacture is extensive, the excretory channels are not able to properly carry off the septic materials, and as a consequence they accumulate and force a passage along the path of least resistance. This forcing of the passage reduces the distention of the spaces between the cells and the pus ultimately finds its way into some one of the surrounding hollow organs, such as the vagina, the uterus, the rectum or the bladder. Occasionally advantageous openings may be forced through the tissues of the peritoneum and the pus exude through the epidermis over the peritoneum or through the labia majora. Cases have been known where these openings were made through the sacrosciatic, the oburator or the umbilical openings. It is very seldom that it finds its way down the thighs sufficiently to make an exit below the line of Poupart's ligament. If situated in the lower part of the pelvis, the abscess makes an opening into the vagina, into which the purulent secretions are thrown. If it develops in the upper part of the pelvis, the openings are made into the intestines or the bladder, but they seldom make their way into the peritoneal cavity.

Symptoms—There are no characteristic symptoms in supuration of the pelvic connective tissues and, as a general rule, they are the same as those which are observed in suppurative inflammation involving the Fallopian tubes or the ovaries. Pain is the most constant symptom and manifests itself in the pelvis and the lower abdominal region whence it radiates throughout the entire pelvis and downward into the thighs.

There is an increase in the temperature and the pulse rate is rapid with the pulse wave weak. There are general symptoms of gastro-intestinal disorders, which give rise to anorexia, which ultimately result in a loss of weight and strength and a general prostration. The increased temperature is remittent and is associated with intermittent chills. Painful micturition or defecation as the result of inflammatory changes in the tissues around the anal canal or the urethra often result in a

marked irritability of the bladder and the rectum. There is no great distention of the abdominal region such as exists in a general peritonitis.

Prognosis—The prognosis is favorable and is dependent upon the reduction of the causative subluxations existing at K. P. and at P. P. When these abnormal conditions are restored to the normal there can be no excessive expression of calorific impulses and thus no excessive manifestation of heat. Neither can there be a deficiency in the nutritive and in the reparatory impulses and, as a consequence, normality must result.

Ectopic Gestation

Definition—This is an incoordination characterized by development of the foetus outside the cavity of the uterus during the entire period of gestation.

In General—It is incorrect to state that an ectopic gestation is one wherein the ovum becomes impregnated outside the cavity of the uterus because many cases occur wherein impregnation takes place in the Fallopian tube and the ovum then makes its way to the uterine cavity, where it undergoes development. It is only in those cases where the progress of the ovum toward the uterus is halted after impregnation has occurred that a true ectopic gestation results.

The disease is divided into two forms known as the primary and the secondary. The former is a condition wherein the ovum maintains the original location wherein impregnation occurs, during the entire course of development, while the latter is a condition wherein the embryo or the foetus is disturbed during development and is made to assume a new location due to alterations in the structure wherein it is imbedded, or due to rupture of the wall in which it is implanted. The primary disease is divided into two varieties known as the ovarian gestation and the tubal gestation. In the former condition we have the development of the impregnated ovum

within the Graafian follicle and, although this condition is a very rare one, it occasionally manifests itself. Tubal pregnancy, on the other hand, is a condition wherein impregnation occurs and development progresses while the ovum is held in the Fallopian tube.

Etiology—Subluxations at K. P. and at P. P. or other local subluxations which serve, by the pathological conditions which they produce, to develop extra tubal changes which occlude the lumen of the Fallopian tubes. This is a comparatively common abnormality and it may occur either in women who have borne children, or in nulliparous women. The condition is the result of pre-existing abnormalities which may be divided into two classes. One of these includes those abnormalities which occur outside the tube and are known as extra tubal causes, while the other conditions are the result of abnormalities existing in the tubes and they are classified as intra tubal causes. Of the intra tubal causes the most common is that of chronic salpingitis, wherein the hypertrophy of the tube interferes with the physiological activity expressed in the form of peristalsis and also exists at the proximal extremity of the tube so that it is impossible for the impregnated ovum to reach the cavity of the uterus. Peristaltic movements of the tube are interfered with, due to hypertrophy. This in a measure serves to prevent the propulsion of the ovum in the uterine cavity. The infiltration of fluid which is associated with chronic salpingitis also serves to enlarge the wall of the tube and materially constrict the opening so that after the ovum has begun its enlargement its progress is arrested and it remains in the canal of the Fallopian tubes. Further, the destruction of the ciliated epithelium which lines the entire extent of the Fallopian canal serves to destroy the function possessed by the epithelium of propelling the ovum by peristaltic activity.

Although the foregoing conditions are indirectly the means which lead to an ectopic gestation, yet it must be re-

membered that they, in themselves, are abnormalities which are the result of subluxations existing in the lumbar region and at K. P. and that, by the correction of these abnormalities, the tube may be made normal and the possibility of impregnation and the development of the foetus in the tube will be thereby eliminated.

Occasionally motor impulses are abnormally expressed so that the ovum which descends to the uterus through one of the Fallopian tubes may be propelled across the fundus of the uterus and make its entrance into the opposite tube. Abnormalities in the expression of the motor impulses here serve to produce retro-peristalsis in this tube which propels the ovum toward the distal extremity where it finds lodgment and they undergo fecundation and development.

Occasionally, tumors develop within the wall of the tube near the proximal extremity and serve to partly occlude the opening so that it is difficult for the ovum to make its way into the uterine cavity. Although this condition is a rare one, it is very apt to give rise to ectopic gestation when it does occur.

Any abnormality which serves to produce a displacement of the tube, wherein this canal is occluded by torsion or twisting, serves to constrict its opening and thereby result in tubal gestation. This condition is the result of abnormalities in the expression of the motor impulses supplied to the walls of the tube or to the development of some other condition which produces cicatrices and thus decreases the lumen. These cicatrices are the result, usually, of an abnormality in the supply of the reparatory impulses so that the wall does not properly heal after a lesion has been produced and inflammatory changes manifest themselves to such a degree that cicatrices or adhesions develop.

Adhesions between the tubes and the surrounding structures are not an uncommon abnormality and are the most frequent of the extra tubal causes. These adhesions serve to find

the tube in abnormal positions so that it may become occluded by torsion or kinking. In other events the development of the adhesions, if they are extensive, serve to destroy the function of the tube and to prevent its producing peristaltic activity. In still other cases, these adhesions may develop in the form of bands around the lumen of the tube, which by their contraction serve to constrict the opening.

The cavity of the tube may be decreased in size, due to the development of tumors outside the walls, which in the course of their development produce pressure upon the tube and cause them to be displaced.

The tubal pregnancies are divided into three divisions which are dependent upon the locations in which the impregnated ovum finds lodgment. The most common form is that wherein the ovum finds attachment in the outer third or ampullar division of the tube, and this form is known as ampullar pregnancy. This form is most apt to occur when adhesions have been formed between the fimbriated ends of the tube and the surface of the ovary. In these events the wall of the ovary assists the ampullar extremity of the tube in forming a sac in which the ovum develops. The lodgment of the ovum in any part of the tube between the ampulla and the point where the tube penetrates the wall of the uterus is known as isthmic pregnancy. This form is not as common as ampullar pregnancy, however. Interstitial pregnancy is the third form and is the rarest of all. It is that condition wherein the impregnated ovum becomes implanted in that part of the tube which penetrates the wall of the uterus and undergoes development here.

Gestation—From the time the ovum makes its attachment on the wall of the tube, this organ becomes enlarged and hypertrophied due to an overgrowth of the tissues which constitute it, together with an infiltration of fluid between the cells of which it is composed. Further, the blood vessels are increased in numbers and size and become extremely tortuous.

The hypertrophy of the tube which occurs at the proximal extremity serves to constrict this opening more and more as the condition progresses, until finally the cavity is entirely closed as is the canal of the cervix during normal gestation. This is merely intellectual adaptation on the part of Innate wherein she is making the best of the condition which prevail by supplying the tubal wall with the proper materials for the normal nutrition of the ovum, and is closing the opening of the uterus so that the amniotic fluids may be retained in the cavity of the tube. As development continues, the wall of the tube becomes stretched and thin and the strength of the wall is materially decreased.

Tubal Abortion—This term indicates the expulsion of the foetus, either totally or in part, from the tube after development has begun, and it usually occurs before the eighth week of pregnancy, owing to the fact that after that time the abdominal end of the tube is occluded and there is no possibility of the discharge of the impregnated ovum at that time. After this time it will be necessary for the wall of the tube to rupture in order to allow for the escape of the foetus. This condition is most apt to exist when gestation occurs in the ampullar end of the tube, while it seldom manifests itself when the ovum is lodged in the isthmic portion of the tube, and never when it finds lodgement in the interstitial division.

When the ovum is discharged in this manner, the condition is associated with hemorrhage, which may be slight or profuse, dependent upon the character of the blood vessels which are involved. If the impregnated ovum is completely expelled, the hemorrhage is not apt to continue for a long period of time, but if it is only partially expelled there are severe contractions at the ampullar end of the tube, whereby Innate strives to expel the product of conception and, as a result of these severe contractions, hemorrhage is apt to be more or less constant until this end is attained. If a large blood vessel is ruptured there may be a very extensive loss of

blood, which in some cases results in the death of the patient.

When this abortion from the tube takes place, the product of conception dies and the impregnated ovum, together with the blood which makes its escape at the same time, are disintegrated and absorbed, being carried away through the excretory channels. In these events the ultimate results of the abortion are not serious, while in other events the hemorrhage is so severe that the symptoms of shock intervene and death is the result. A haematosalpinx may manifest itself, particularly when the abdominal end of the tube does not completely discharge the ovum and when there is a congestion in the tube to such a degree that the uterine end becomes occluded. Here there is no method of escape provided for the blood which accumulates and, as a consequence, it serves, by its pressure to distend the walls of the tube and thus form a haematosalpinx. A pelvic haematocele may result as the consequence of the discharge of blood between the layers of the broad ligaments or in the peritoneal cavity. This haematocele may be walled off by adhesions which serve to confine it within comparatively constricted limits. On the other hand, these adhesions may not be formed, and as a result the blood finds its way to various parts of the peritoneum, where if local subluxations exist, it may be productive of peritonitis. The results of the haematocele are determined entirely by the degree of subluxations which exist and the character of impingements which manifest themselves. If the impingements involve the calorific nerves so that these impulses are expressed in excess and if there is a deficiency in the reparatory and nutritive impulses, then inflammation is very apt to supervene. If, on the other hand, the subluxations do not involve the peritoneum itself, this membrane is possessed of a normal capability and Innate is enabled to form adhesions by the union of its surfaces in such a way that the blood is encapsulated and fails to involve a wide area. This walled off haematocele may become infected, due to impingements

occurring later in those nerve fibers which supply its wall, and, as a result, a pelvic abscess is formed, which, as it continues to enlarge, ultimately ruptures into some one of the surrounding hollow organs, such as the rectum, the bladder or the uterus.

Rupture of the Fallopian Tube—This is a condition which is very apt to occur during the course of tubal gestation and is the result of an overdistention of the walls of the tube which results in their rupturing and discharging the impregnated ovum into the abdominal cavity. This rupture is most apt to occur through the abdominal opening of the tube, although it may be directly through the tubal walls. This rupturing of the tube is most apt to occur as the result of a mechanical condition on the external, associated with the overdistention of the wall. Particularly is it associated with heavy lifting, violent exercise and intercourse. It is not always that the rupture takes place in the abdominal cavity, but it may occur between the layers of the broad ligament or into the uterus as well.

The rupture of the tube into the abdominal cavity may occur no matter which section of the tube contains the impregnated ovum and this form usually terminates fatally, due to the extensive rupture of blood vessels, which is associated with it. Particularly are these hemorrhages apt to be severe if an interstitial pregnancy exists because the proximal extremity of the tube possesses a greater thickness and a greater degree of vascularity. This hemorrhage may be severe and sudden, or it may occur gradually, in which event it may produce no very noticeable symptoms. In practically all of these cases, the foetus dies when it is expelled from the tube, but occasionally cases are met with where the impregnated body continues to develop even after its expulsion from the tube, providing its membranes have not been ruptured, or its tubal attachments destroyed. It is impossible for the fertilized ovum to break away from its tubal attachment and to form

new attachments on the peritoneum and continue to develop.

It is seldom that rupture of the tube discharges the ovum between the layers of the broad ligaments, but when this does occur, the hemorrhage is not so dangerous because the blood which makes its escape is confined in a more or less limited space. A haematoma is, however, produced between the layers of the broad ligaments which later undergoes absorption together with the foetus. If absorption does not occur septic changes may manifest themselves and the symptoms of peritonitis intervene. In those cases where the embryo survives, there is a gradual pushing aside of the layers of the broad ligament to accommodate the enlarging ovum and as this development continues the other pelvic organs are more or less displaced to accommodate the structure. Where there are subluxations existing in the lumbar region, which serve to make it impossible for Innate to affect an intellectual adaptation, the layers of the broad ligament are unable to undergo structural changes whereby they may withstand the increased pressure. As a consequence, there is a second rupture through one of the layers of the broad ligament, which allows the foetus to extend into the peritoneal cavity, where it may continue to develop or may be absorbed, together with the blood which makes its escape. Whether the foetus continues to live or not is dependent on the degree of rapidity with which it is expelled. If the change occurs gradually, so that Innate is able to adapt herself to this altered condition, the tissues around the foetus accommodate themselves to the new position and the development may go on to full term. If, on the other hand, the expulsion is sudden, the membranes of the foetus are ruptured and its original attachments are destroyed to such a degree that further development is impossible.

In some cases the impregnated ovum is expelled into the uterine cavity and this is particularly apt to occur if the case is one of interstitial pregnancy. After this expulsion takes

place, the ovum continues to develop, providing the original attachments have not been broken, but if these attachments have been destroyed the foetus dies and is expelled from the uterus. At this time there is also a more or less profuse loss of blood which is dependent upon the degree of laceration which takes place when the ovum is expelled. In case of interstitial pregnancy, where this change manifests itself, the hemorrhage is apt to be severe.

Tubal abortion is most apt to occur before the fourth month, occurring more often in the early stages of pregnancy when the ovum is implanted in the isthmus or ampulla while it is more apt to occur at about the fourth month when it is implanted in the proximal end of the tube.

Death of the foetus before tubal abortion occurs: This is a condition which manifests itself as the result of an accident due to lumbar subluxations, or it may be due to a greater degree of impingement on the nerve fibers supplying the foetal membrane, wherein they are not able to supply these structures with the proper amount of nutritive and expansion impulses. Then, again, a lack of motor impulses in the vessel walls of the membrane may result in a rupture of these vessels so that the membranes are filled with blood and the sac which contains the impregnated ovum is also filled with blood. Either of these conditions serve to produce death of the ovum and it then remains in the tube as an organized mass. This growth is known as a tubal mole and its size depends upon the degree of development which has taken place in it at the time death occurs. It ultimately undergoes absorption and is eliminated by the excretory organs of the body, but this absorption process, as a rule, occurs slowly and while the mole still remains as a considerable mass in the tube, it serves as an obstruction which is very apt to result in a haematosalpinx.

Changes in the Ovum After Death—When death occurs in the early stages of development, the tube may rupture and discharge the impregnated ovum into the peritoneal cavity,

between the layers of the broad ligament or into the uterus. In any of these events the foetus may continue to exist as an isolated mass for a long period of time before it finally undergoes absorption. On the other hand, it may be absorbed within a comparatively short time and the only unusual symptoms will be those of hemorrhage which occur at the time of the expulsion. Finally the mass may undergo suppurative changes and result in an inflammatory change in the tissues with which it comes in contact. This may take the form of a general or localized peritonitis or a suppuration of the pelvic connective tissues. If death occurs in the stages of development, it may undergo calcification or fatty degeneration or the soft tissues may be disintegrated and absorbed, leaving nothing but the skeleton. Usually a capsule is formed around the remaining mass and the body remains in the mother for an extended period of time; sometimes for several years. There is always the possibility of suppuration occurring in these masses, which allows the foetal remains to make their way into some one of the surrounding hollow organs, due to a rupture of the sac which contains them, through the walls of these surrounding organs.

The Development of the Foetus—As a rule, in cases of tubal pregnancy, the foetus does not receive the proper amount of nutrition, nor does it receive the proper nerve supply which makes for a physically perfect growth. As a result, the product of tubal conception is usually undersize and ill-nourished, with very often marked physical defects, such as spinabifida, club foot, or hydrocephalus. Even though the pregnancy be to full term, the foetus usually dies at the time of delivery, or if it is safely delivered, it possesses little vitality and usually death results within a very few days or weeks.

Changes in the Uterus During Tubal Pregnancy—At this time the uterus undergoes many different changes which are normal to it, where conception takes place and the foetus develops in its cavity. Its walls become hypertrophied and en-

larged, the cervix soft and the external os becomes patulous. The greatest enlargement is noticeable in the direction of the uterine axis and it shows little tendency to produce enlargement in its cross sectional diameter. If an accident occurs during the development of the foetus in the tube, the uterus ceases to enlarge, while if no accident occurs and if the foetal body continues to develop, it may attain a size equal to that found in the fourth month of normal pregnancy.

Symptoms Before Abortion—A tubal pregnancy results in abortion, as a rule, within the first three months and, as a result, the symptoms which exist during the early stages are important, together with those which manifest themselves at the time of the abortion, in determining the exact condition which exists. Usually a morning sickness occurs during the early stages of this abnormality as it does in pregnancy, but in some events this symptom does not manifest itself. There is usually a sensation of distention in the breasts and menstruation usually ceases. If the menstruation does not entirely disappear, the amount of the flow is usually markedly diminished.

The *desidua vera* which is developed in the uterus even though the pregnancy exists in the tube, is usually given off from the uterus either as a complete membrane or in the form of shreds which result from its being broken up in the uterine cavity. When the *desidua* is expelled there are marked symptoms of *metrorrhagia*, which are sometimes very severe and lead the patient to the belief that she has undergone miscarriage. In other events, however, the hemorrhage may be less severe and may only manifest itself by a discoloration in the mucus which is expelled and in the shreds of the *desidua*.

Pain is present in the hypo-gastric and in the inguinal region which is usually of a colicky character, due to the contractions which are manifest in the uterus at this time. They may occur at intervening periods, even before the *desidua* is

expelled and are then the result of the natural contractions of the uterus which occur during pregnancy.

The colostrum usually appears in the breasts at the end of the third month and an analysis of it shows it to be practically the same as that which occurs in normal pregnancy. The normal changes which occur during pregnancy in the vulva and the vagina do not manifest themselves in tubal gestation, as a rule, until the end of the third month, at which time there is a dark pigmentation of the vulva with a more or less profuse leukorrheal discharge and a bluish discoloration of the mucous membrane lining the vagina. The vaginal vessels are enlarged and the peripheral resistance in the arterioles permit the pressure to be manifest in the venules and veins in the form of a pulsation. The breasts are enlarged and the veins in these glands become distended and visible. There is the normal pigmentation of the areola. The cervix of the uterus is softened and the external os becomes patulous, extending down into the vaginal cavity. This softening of the cervix and the patulous condition of the external os are commonly early symptoms which begin to manifest themselves immediately after impregnation occurs. The uterus is also enlarged, although this development does not progress with the same degree of rapidity as in normal gestation.

Upon palpation it will be found that the Fallopian tube is enlarged and it is usually located at the side of the uterus or in some events behind it. This enlarged tube shows a distinct elongation and upon pressure discloses a soft, boggy character. Pain is usually manifest when this pressure is applied and extreme care should be taken to see that the tube is not ruptured, due to rough manipulation. Particularly is this an important factor to bear in mind when the practitioner is making a nerve tracing to the region of the abdomen.

Symptoms Occurring at Time of Abortion—In some cases the rupture of the tube is preceded by the development of colicky pains a few days previous to the actual discharge of

the contained ovum. As a rule, however, the symptoms of the abortion manifest themselves suddenly, without warning symptoms. Although rupture of the tubes is most apt to occur during unusual exertion, this is not always true and occasionally the wall of the tube is broken through while the patient is in the recumbent position and undergoing no physical exertion. Finally it must be remembered that a slight hemorrhage may be associated with the rupture and particularly if this occurs in the early stages the patient may escape with very little, if any, manifestation of structural changes.

Ordinarily, however, the rupture of the tube is associated with sudden and severe pain, which is immediately followed by the symptoms of collapse. The pain is acute and agonizing in character, and may be so severe that consciousness is lost. This pain is centered in the region of the affected tube, but usually radiates from here throughout the entire abdominal region. Immediately following this sudden manifestation of pain there is a marked decrease in the force of the pulse and an increase in its rapidity. In some cases the pulse may be indistinguishable. The temperature is decreased and the respirations are rapid and shallow, with an extreme pallor and a fixed, glassy expression of the eye. The pupils are dilated and the extremities are cold, with a cold, clammy feeling over the entire body, associated with an excessive perspiration. Nausea and vomiting are not uncommon and are found particularly in severe cases where consciousness is lost.

The degree of hemorrhage and thus the degree of symptoms which manifest themselves are dependent upon the character and location of the blood vessels which are involved. If a large artery is ruptured the loss of blood is more extensive than as if a vein or a mass of capillaries are severed. In these latter events, there is not as great an escape of blood because the pressure in the veins is not so great as that in the arteries and because when the capillaries are involved they tend to contract at their severed ends and automatically stop the

hemorrhage by rolling up of their endothelial cells. When the hemorrhage takes place in the peritoneal cavity, it is more extensive and death usually supervenes within a very few hours. When the hemorrhage takes place between the layers of the broad ligament, death seldom results, because the discharged blood finds its way into a comparatively narrow cavity which quickly stops the flow from the vessels involved. The pain is, if anything, more severe when the rupture takes place in the layers of the broad ligament than when it takes place in the peritoneal cavity. This, because as the blood escapes it forces apart the two layers which constitute the broad ligament and if it is in sufficient quantities to produce a marked distention, pressure symptoms may manifest themselves. The symptoms of collapse, however, are very unusual where the hemorrhage takes place in the broad ligament.

After a rupture has taken place into the peritoneal cavity there is a marked distention of the culdesac of Douglas and a sensation of fullness is manifest here which results from the presence of the free fluid in the peritoneal cavity. This, however, is a condition which exists in the early stages, while after adhesions have been formed, they serve to confine the blood within certain well defined limits. The mass appears to be soft and doughy in consistency. This is because the fluid elements have been taken from the blood while the solid elements are left, which are encapsulated by the adhesion. This mass projects as a soft extension into the vaginal cavity by forcing downward on the posterior vaginal wall. If extremely large, it presses upward and forward in the abdomen and can be palpated through the abdominal wall. If it attains sufficient size it may produce abnormalities in the positions of other pelvic viscera and particularly is it apt to force the uterus forward so that an antifixion or an antiversion develops.

When the wall of the tube ruptures and allows the impregnated ovum to make its escape between the layers of the broad ligament, there is an associated escape of blood which

gathers between the layers of the broad ligament and forms here a circumscribed tense mass which is more or less confined within narrow limits. This may be upon one or both sides of the uterus and it may project downward to force inward the lateral wall of the vagina or project upward above Poupart's ligament. If it is located on one side of the pelvis alone, its pressure causes the uterus to become flexed or verted toward the opposite side. It may extend downward and produce compression on the cervix or backward and produce pressure upon the rectal walls. Because of the enlargement of the broad ligament, it is often difficult to discover the tube or the ovary upon palpation.

Symptoms During the Later Stages of Gestation—Amenorrhea usually exists although it is not a constant symptom. As a matter of fact it is not as common as in normal pregnancy. Some cases occur where there are intermittent hemorrhages throughout the entire course of the pregnancy which are associated with the expulsion of shreds of decidual material. The enlargement due to the development of the foetus is recognized at an earlier stage when tubal pregnancy exists than in normal pregnancy. Also the movements of the foetus and the fetal heart sounds are apparent earlier because of the greater proximity of the foetus to the surface of the abdomen. The enlargement of the abdomen is not as symmetrical as it is in normal pregnancy, although this lack of symmetry is more marked in the early stages than in the latter stages of gestation. Usually near the end of the term, the symptoms of labor make their appearance and are characterized by severe abdominal pains, due to the uterine contractions and at this time the foetus usually dies. The duration of the pains and the intensity vary in different cases and at these times there usually are expelled masses of the decidua. The enlargement of the uterus continues throughout the entire period of pregnancy and a length of six or eight inches is sometimes attained as compared with a three-inch length in the normal organ.

Prognosis—Here we must consider prognosis from a standpoint involving the well-being of the mother as well as that of the unborn child. If an impregnated ovum has been lodged in the Fallopian tube, and there undergoes development it cannot thereafter be dislodged and form new attachments in the uterus. In the early stage of pregnancy, if normality is restored to the Fallopian tube and to the uterus, and if there are no outside growths to produce pressure at the uterine end of the tube, then it is well to restore normality in the lumbar region as soon as possible so that Innate may produce dislodgment of the impregnated ovum by tubal contraction and the mass be thereby expelled to the external.

If the tubal pregnancy has existed for several months, the adjustments should be given with a view to establishing the greatest possible degree of normality so that adaptative processes may be resorted to by Innate and the foetal body be thereby expelled with the least possible degree of danger to the mother.

If normality exists in the uterus and in the other pelvic organs before impregnation occurs, then the tubal pregnancy cannot possibly manifest itself because the lining membrane of the uterus is properly prepared for the reception of the impregnated ovum and no obstruction exists in the Fallopian tube which interferes with its progress through this canal.

It is particularly essential during the course of a tubal pregnancy for as great a degree of normality to exist as possible so that if rupture does occur and if the foetus is expelled from the tube, the greatest possible degree of efficiency will be manifest by the excretory channels by carrying away the products of conception. It is only when the reparatory and nutritive fibers as well as the calorific fibers are impinged that suppuration can exist in any of the surrounding tissues and it is particularly to be desired that this change does not manifest itself.

CHAPTER VIII

DISEASES OF THE URINARY SYSTEM

Urethritis

Definition—An incoordination of the urethra characterized by an excessive heat and excessive exudate, either of the simple or septic form.

Etiology—Subluxations at K. P. and at L. P. P. This disease is not as common in women as in men, because there is a lesser area to be involved and because the canal is shorter in the former than in the latter. Being more distensible, it is not as apt to receive and retain septic materials as is the urethra in the male and thus, even though subluxations are present which give rise to inflammatory changes, these changes are less severe when no toxic materials are present to irritate the already sensitive membrane. The majority of cases are specific and are the result of the toxins affecting the urethra through contact with gonorrheal inflammation in the male or by extension of gonorrheal inflammation from the external generative organs. It should not be understood that the toxic materials of gonorrhea are all that is necessary to produce gonorrheal urethritis, however, because many cases are on record where mucous membranes have been in contact with other membranes possessed of gonorrheal inflammation and which did not contract the disease.

Where urethritis exists in the simple form, it is often preceded by inflammatory changes in the lining membrane of the bladder. It is often associated also with traumatism incident to childbirth, or to that produced by the passage of a calculus

through the urethra. Vaginal discharges which are irritating in character and which come in contact with the mucous membrane lining the vulva or the urethra make manifest an inflammation here which may have been existing in the latent form for a long period of time. Neoplasms of the urethra, or those which occur at the base of the bladder, may produce compression upon the veins draining the walls of the canal and thus give rise to a congestive inflammation. Although the inflammatory changes are associated with the conditions which we have enumerated, it is absolutely essential that impingements upon the nerve fibers supplying the walls of the urethra or the base of the bladder shall exist in order to make the membranes susceptible to inflammatory changes. In the traumatism of labor or in the passage of a calculus through the urethra it is true that an irritation is produced, but this, in itself, is not sufficient to give rise to inflammation unless associated with an impingement involving the calorific nerves and the secretory nerves passing to the mucous membrane of the canal. Neither will the irritating discharges from the vulva or the vagina in themselves produce urethritis, but it is necessary for impingements to be present in those nerve fibers supplying the mucous membrane of the urethra, in order for the inflammation to manifest itself.

Symptoms—In the gonorrheal form of the disease, there is a sensation of itching in the early stages which is followed by a burning sensation upon micturition. This sensation of burning becomes more intense as the disease progresses and there is apt to be a continual desire to expel the urine if the bladder becomes affected with inflammatory changes. The disease may entirely disappear or the symptom may become less profuse and the disease gradually merge into the chronic form. If the symptoms do become chronic in character the pain upon urination is less intense and while the patient may suffer from frequent urination, this is not as pronounced as in the acute disease. There always remains, however, in the

chronic form a tendency to cystic soreness and soreness in the ureter.

As the disease progresses the external meatus shows an enlargement due to the inflammation and congestion of the lining membrane. A purulent discharge is discovered in the more severe cases which gives the appearance of a small yellowish spot surrounding the ovaries, which spot is completely enveloped by a swollen, red, inflamed zone. Occasionally in the severe forms pus does not gather at the external opening but it can be made to manifest itself by pressure upon the urethra or upon the ducts draining the glands of Skene.

Upon pressure the urethra is found to be tender and swollen, giving the appearance of a cord-like enlargement along its course. In the sub-acute or chronic form, the enlargement decreases in size, although it is always present in some degree, there is always a slight sensation of tenderness upon pressure. In those cases where the incoordination completely disappears there are no physical signs which remain as the result of inflammation.

If the disease is gonorrheal in character, it may be the result of the manifestation of a latent gonorrhea which has been existing in the patient for a long period of time. This latent gonorrhea is usually present in the glands of Skene or in other parts of the generative tract and becomes manifest when the impingement on the nerve fibers supplying the mucous membrane of the urethra again develops.

Prognosis—The prognosis is favorable in all cases of urethritis, but the length of time required to effect a restoration to normality is greater in the severe forms of the disease. This, because in the severe form the degree of impingement is greater, due to a greater degree of subluxation and it is necessary not only to reduce the existing subluxation, but also for Innate to restore a degree of normality in the ligaments of the spine in order to make them capable of maintaining the vertebrae in their normal positions.

Stricture of the Urethra

Definition—An incoordination wherein the lumen of the urethra is decreased in size either due to a contraction of the muscle fibers in its walls or to the existence of some other structural change which serves to compress the canal.

Etiology—Subluxation at L. P. P. alone, or at K. P. and L. P. P. If the disease is the result of a contraction of the circular muscle fibers which are found in the wall of the urethra, then the only nerve fibers which are involved by the subluxation are those which transmit motor impulses to the wall. The disease is often, however, associated with inflammatory changes in the urethra, wherein the mucous membrane becomes infiltrated with fluid due to the enlargement and relaxation of the vessels supplying the membrane. Here we have an association of the K. P. subluxation which involves the function of excretion to such a degree that the fluids cannot be properly carried away and, as a result, they find lodgment in the wall of the urethra. The secretory and calorific fibers which supply the urethral wall are also involved and this involvement is manifest by an excessive amount of secretory and calorific impulses.

A stricture may be produced by the presence of a chancre, a chancroid, a tubercle or any form of malignant or benign tumor which develops in the wall or in adjacent structures in such a position as to produce pressure upon the wall of the urethra. Various combinations of impingements may produce these several diseases and among them we have those transmitting impulses of secretion, excretion, expansion, calorific and nutrition. The exact structural change which occurs depends upon the degree of impingement and the combination of fibers which are affected by them.

Sometimes scar tissue develops in the wall of the urethra due to the passage of calculi from the bladder or to lacerations received during childbirth. These latter are the most difficult

to obtain results upon because the cicatrical tissue is the result of an adaptative process, made by Innate for the restoration of a condition approaching the normal as nearly as possible. In these latter conditions, if the proper adjustments are given, Innate is able to break down the cicatrical tissue to a certain extent and restore a degree of normality to the affected part, although it is doubtful if complete normality ever recurs.

Symptoms—The most constant symptoms are those of frequent desire for micturition and more or less pain during the process. In some events the urethra, while constricted, yet has its circular fibers involved to such a degree that they cannot properly produce closure and as a result incontinence of urine may manifest itself. In the majority of cases, however, these strictures decrease the lumen of the tube to such a degree that a partial or complete occlusion of the canal may occur and thus cause difficult and painful urination or retention.

There is usually an induration around the stricture which may be felt upon vaginal examination as a small hard mass. If it is near the external meatus, as is usually the case, it can be observed upon examination.

Prognosis—The prognosis depends somewhat upon the character of the incoordination which is productive of the stricture, it being more favorable in those conditions which have undergone less structural change while a longer period of time is required to restore normality where greater structural changes have occurred. Urethral tumors either of the benign or the malignant form and stricture due to the infiltration of fluid which occurs during inflammation, usually involve the entire extent of the urethra so that greater structural changes are necessary to restore the canal to normal. Where a comparatively small area is involved, the length of time required to effect its restoration is not so great. In any event the prognosis is favorable, but the length of time required to effect a

complete recovery must always be measured by the extent of the disease.

Vesico-Urethral Fissure

Definition—An incoordination characterized by the existence of a fissure at the point of union between the bladder and the urethra, which extends in part, into both cavities.

Etiology—Subluxations at K. P. and at L. P. P. or at L. P. P. alone. The disease is usually preceded by the formation of an ulcer, which because of the degenerative changes which occur in it, are ultimately productive of a fissure. The ulcer which is formed is usually the result of inflammatory changes in the urethra and bladder and is particularly associated with gonorrheal urethritis. Displacements of the bladder may be productive of a congestive inflammation which may ultimately terminate in the formation of an ulcer, if the nutritive and reparatory fibers are impinged and fail to supply the tissues at the junction of the bladder and the urethra, with the proper amount of mental impulses. Finally, the passage of a calculus through the urethral canal or an injury resulting at childbirth may, together with the existence of nerve impingements on those fibers supplying the urethral wall, give rise to inflammatory changes which terminate by ulceration. Although in all of these events we have designated the ulcer as an initial factor, still it must be remembered that the formation of this abnormality is in itself, dependent upon subluxations existing in the lower lumbar region and at K. P. The inflammation and the ulcer should not then be considered, as in themselves causative factors, but merely stages in the course of an incoordination which ultimately result in the production of the vesico-urethral fissure.

Always there must be existent a lack of reparatory impulses being supplied to the tissues which are involved in the ulcer, in order for the structural change to manifest itself in

the form of a fissure. Usually about one-third of the length of the fissure extends into the bladder, while two-thirds extends into the urethra. This fissure may occur at any point in the circumference of the canal and it is possessed of an indurated base which is inflamed and of a grayish-yellow color.

Symptoms—The symptoms are largely dependent on the degree of structural change which has occurred in the involved tissues and upon the situation of the lesion. If it is located within the urethral canal entirely, the only symptoms are those of a slight burning sensation during micturition with perhaps a frequent desire for urination. If, on the other hand, it extends well up into the floor of the bladder, there is a continual frequent desire to urinate because of the constant irritation upon the raw surfaces, which is made by the presence of the urine. Pain is also more marked where the fissure involves the floor of the bladder because of the contraction occurring around the vesico-urethral orifice at the time of micturition. There is a constant burning sensation in the floor of the bladder and the pain which is present during urination, is often agonizing in character and associated with severe urethral contraction. This pain exists not only at the time of micturition but for a short period following the act, when it gradually subsides and manifests itself only as a latent, burning sensation.

Prognosis—The prognosis is dependent upon the length of time required to restore the subluxated vertebrae to their normal positions. As soon as this is accomplished, Innate is enabled to send the proper amount of reparatory impulses to the involved tissues and the fissure is readily healed. Not only are reparatory impulses sent in normal quantities, but the expansion and nutritive fibers are released and express themselves normally in the involved area. Further, the inflammatory changes which are often associated with the presence of fissures cease to manifest themselves and normality in the mucous membrane results.

Prolapse of the Urethra

Definition—An incoordination involving the mucous membrane of the urethra wherein it undergoes an eversion, disclosing itself through the external meatus.

Etiology—Subluxation at L. P. P. The disease is very often associated with some other abnormality in the structure, but it may be the result of a simple relaxation in the tissues which attach the mucous membrane to the underlying structures, or an hypertrophy of the cells wherein the lining becomes detached and protrudes through the external meatus. The common condition which is found, of a slight eversion of the mucous membrane in women who have undergone child-birth should not be confused with prolapse of the mucous membrane as it is more or less of a slight abnormality which is the result of traumatic conditions occurring at the time of delivery.

Particularly is this disease present in old women and in young children who are poorly nourished or chlorotic. Here there is an associated group of subluxations involving the lower dorsal region which manifest themselves in the form of abnormalities in the absorption of food products or in the production of materials that are utilized in digestion. These factors together with the local subluxation in the lower lumbar region give rise to a weakening of those tissues which are supplied by the nerve fibers emanating from between the involved vertebrae. When these nerve fibers supply the urethral wall the urethra becomes affected and the character of that affection is dependent upon the character and degree to which the nerve fibers are impinged.

Occasionally the mucous membrane of the urethra may become detached from its underlying tissues during the course of a severe labor, and if the reparatory impulses are not normal, so that the proper conditions may be restored, it will remain detached until such time as normality again manifests

itself. An extremely severe inflammation wherein the mucous membrane becomes markedly swollen and hypertrophied, may develop into a prolapse of the urethral mucous membrane if the motor impulses are deficient in quantity or quality. If a tumor or polypus develops in such a location that it produces torsion or traction on the walls of the canal, this, in itself, may act as a vital factor, together with subluxations at L. P. P., in the production of the disease.

The degree of the eversion and the size of the enlargement produced at the external meatus are dependent upon the degree of impingement which is productive of the disease. Occasionally only a part of the mucous membrane is affected by the detachment, while in other cases practically all the lining membrane is involved. It is more common for the lower extremity to become prolapsed than for any other part of the membrane. In children possessing a strumous diathesis, or in those suffering from chlorosis, the entire canal is apt to be involved because of the general loss of tonicity throughout the entire body and this condition is associated with the local subluxation in the lower lumbar region. Thus, in those cases occurring in children, the enlargement which manifests itself at the external meatus is particularly well marked. The enlargement which is present is dark red in color due to the congestion of blood which is present in it, and it presents a very small tumor or a large tumor, depending upon the degree of involvement. If the entire circumference is affected, the protrusion discloses itself as a dark colored mass in the center of which is the opening of the urethra. If, however, only a part of the circumference is involved, the mass projects on one side of the urethral opening as a comparatively small protrusion. In the beginning the congestion is not as severe as it is in the later stages unless the mucous membrane is constricted by the external meatus, when, of course, the drainage veins are materially affected and a congestion is immediately produced. In the less severe forms this congestion becomes

more marked as the disease becomes more chronic. This, because the mucous membrane becomes swollen due to the constant irritation of the urine which passes through the already constricted opening. As the oedematous condition increases, the effect that is produced by the meatus is more and more noticeable and in some cases this constriction may be so marked that a complete strangulation is produced and the entire protruding mass will be sloughed off.

Symptoms—The symptoms are not unlike those which are found associated with excessive growths of the urethra, particularly the urethral polypi. Painful and frequent urination are the most common symptoms met with, the latter being due to the associated involvement of the bladder, which, in the majority of the cases accompanies this disease. The pain which is produced by the protruding mass may become very severe and in some instances, the tenderness may be so great that the patient cannot bear to have any pressure or friction applied upon it. For this reason all forms of exercise are made extremely difficult and intercourse is impossible. Sometimes even walking gives rise to a great deal of pain. The distinctive features between prolapse of the urethral mucous membrane and polypi developing in this canal is in the fact that the former possesses a broad base, while the latter is almost pedunculated.

Prognosis—Adjustments in the lumbar region serve to restore the normal degree of tonicity to the fibers which support the membrane and attach it to the underlying structures, while if the disease is associated with a strumous diathesis, a general debility or a chlorotic condition, adjustments should be given in the middle and lower dorsal region in order that normality may manifest itself in the digestive tract and the normal vitality and resistance of the patient be restored. Where the constitutional diseases are associated with the localized incoordinations, the prognosis is still favorable, but

the time occupied in affecting a complete restoration to the normal is greater.

Dilatation of the Entire Urethra

Definition—An incoordination characterized by the loss of tonicity throughout the entire wall of the urethra due to the impingement of motor fibers supplying this wall and emitting from the lower lumbar region.

Etiology—Subluxation at L. P. P. Although this incoordination is not as commonly met with as dilatation of only a part of the urethra, yet it is sometimes found and is associated very often with other abnormalities. If a tumor develops near the external meatus, or if a stricture occurs here due to the excessive expression of motor impulses, the urine is dammed back in the urethra when the bladder contracts to expel it to the external, and as a consequence, excessive pressure is produced which serves to stretch the walls of the canal. This stretching, in itself, is not sufficient to produce a dilatation of the canal, but it must be associated with a lack of motor impulses supplying the walls in order for the disease to manifest itself. Furthermore, it must be remembered that the existence of a stricture, due to excessive motor impulses or to the development of a tumor near the external meatus are, in themselves, abnormal conditions which are the result of subluxations in the lumbar region. Thus, a reduction of these subluxations by proper adjustment not only restores tonicity to the urethral wall, but it also eliminates those conditions which, when associated with a lack of motor impulses, are productive of the disease. In a general way it may be said that the excessive congestion and enlargement of the blood vessels supplying the urethral wall during pregnancy has a tendency to allow for the greater distention of the tube. This is particularly apt to effect ill results if sub-involution occurs and the condition remain as a permanent one following the gesta-

tion period. Finally, it may be said that a chronic inflammation of the mucous membrane produces an enlargement which allows for an extreme dilatation of the outer limiting walls so that when this inflammation disappears they are found to have assumed an abnormal position.

Symptoms—The most common and distinctive feature of the disease is the inability of the patient to retain the urine. This incontinence may be continuous or it may occur only at those times when a special unlooked for strain is placed upon the pelvic viscera. The continual loss of urine due to the dilatation brings the mucous membrane ultimately to a state of inflammation which is due to the subluxations existing in the lower lumbar region and at K. P., but is made active by the local irritation. If the disease is associated with a urethritis the mucous membrane is congested and swollen and painful so that the passage of urine gives rise to more or less irritation and pain. The extent to which the urine is lost through inability of the patient to control the flow is dependent upon the degree of abnormality and very often this is only slight. Where it is only slight, the only symptoms manifest are those of a frequent desire for micturition and there may be no incontinence whatsoever.

Inspection discloses an external meatus which shows a pouting membrane and a degree of gravitation which extends into and is apparent in the anterior wall of the vaginal canal. This dilatation follows the course of the vagina and is felt as a more or less elastic mass extending throughout its entire extent. The degree of this extension, of course, depends upon the degree of dilatation and unless the friction which is produced in the vaginal canal is sufficient to give rise to inflammatory changes here, the effects upon the function of the generative tract are not apparent.

Prognosis—The first consideration is a reduction of the subluxation which exists at L. P. P., in which event Innate is enabled to send the proper amount of mental impulses to the

mucous linings and to the connective tissue of the muscular walls of the urethra so that the normal degree of tonicity may manifest itself. If there are associated conditions, such as a stricture or tumor, at the external meatus, these should also be considered in the elimination of the disease. If it is associated with a urethritis which is chronic in character, the subluxation at K. P. should also be adjusted in order to do away with the possibility of distention of the canal by the congestion of the mucous membrane. The prognosis is unquestionably favorable and the length of time required to effect a complete restoration to normal should not exceed several weeks time in acute cases although longer periods are required where the condition is a chronic one.

Urethrocele

Definition—An incoordination involving the motor fibers in the posterior wall of the middle one-third of the urethra, which allows for a dilatation which extends as a marked projection into the vaginal canal.

Etiology—Subluxation at L. P. P. with a possible involvement of K. P. as well. This disease is more commonly met with than those conditions where the entire urethra is dilated because a lesser degree of subluxation is required to produce the incoordination. Very often the traumatism which is incident to childbirth gives rise to a stretching of the entire vaginal canal which affects to a greater or less degree the wall of the urethra. This fact, together with a lack of motor impulses supplying the middle third of the urethral wall may manifest itself as a dilatation of this particular part of the tube. The sagging occurs at the middle part of the urethra and thus the projection is made into the lower extremity of the vagina, where it is readily visible upon examination. This dilatation eventually develops into a distinct sacculation due to the accumulation of urine which occurs in it. Particularly

is this true, if the disease is associated with a stricture of the lower extremity which gives rise to more or less excessive pressure during the act of urination.

Symptoms—The urination is frequent and painful as a rule, and there may be a partial incontinence of urine, due to the general dilatation which is associated with the condition and a loss of tonicity in the motor fibers existing at the external meatus, which allows for the constant escape of urine from the sac. There is a frequent desire for micturition and more or less pain during the act due to the existence of associated inflammation of the mucous membrane lining the canal. This inflammation is the result of the excessive expression of calorific impulses and secretory impulses, together with the continual irritation which is produced by the constant contact of urine. The straining which is produced during micturition serves to force the urine into the sacculation and produce an even greater distention of that pouch. The incontinence is the result of special straining which is produced at the slightest exertion, such as coughing, sneezing, etc. Here there is not necessarily a lack of tonicity in the muscle fibres at the vesico-urethral orifice but rather the excessive pressure which is produced upon the pelvic viscera which causes the urine contained in the sac to be forcibly expelled through the external meatus.

Prognosis—The prognosis is favorable and is dependent upon the restoration of the lumbar vertebrae to their normal positions. As soon as this is affected, normal tonicity is restored in the urethral wall and the canal is returned to its normal size. The length of time required is largely dependent upon the duration of the disease, it being greater where the disease is chronic than in those cases where it is acute. In the former condition there is not only a greater structural change in the walls of the urethra, but the vertebrae have become more or less fixed in their abnormal positions, so that it is necessary for Innate to restore normality to the ligaments of

the spine in this particular region before the vertebrae can be properly retained in their normal positions.

Sub-Urethral Abscess

Definition—An incoordination characterized by the development of an abscess in the posterior urethral wall, which usually affects the communication of the glands of Skene with the canal of the urethra.

Etiology—Subluxations at K. P. and at L. P. P. Although this is an uncommon disease, it may result from a certain combination of impingement on certain varieties of nerve fibers emanating from the lower lumbar region together with a general lack of elimination due to subluxation at K. P. The disease is usually associated with inflammation of the urethra wherein the inflammatory alterations extend into and include the ducts of Skene, wherein the ducts become occluded and there is an accumulation of pus within their canals. There is a lack of nutritive and reparatory fibers expressed in the glands of Skene and the mucous lining of their ducts together with an excessive amount of calorific impulses. Occasionally this disease follows a urethrocele which develops during the course of an inflammation. Further subluxations later induce greater structural changes in the mucous membrane lining the sacculations and tend to produce a purulent excretion which gathers in the sac and discharges into the urethral canal. In this case the causative factor lies in the subluxation existing at L. P. P. and at P. P., but the inflammation is made acute by the accumulation of urine which serves to undergo decomposition when the toxic substances come in direct contact with the already sensitive glands. Sometimes the inflammatory changes become so severe that the opening into the urethra becomes occluded due to the congestion of the mucous membrane and thus the abscess becomes walled off for a short period of time. Ultimately, however, the accumulation of pus

becomes so extensive that it produces excessive pressure which affects a perforation through the old opening and the purulent exudate is again discharged through the urethral canal.

Symptoms—The most prominent and characteristic symptom is that of extreme pain centered in the abscess and radiating from here to the adjacent pelvic organs, such as the vagina and the bladder. The extent of the pain depends upon the severity of the inflammation and the rapidity with which the pus is formed. This pain is particularly marked during those acts which require an excessive pressure in the abdominal and pelvic regions, such as urination and defecation. The tenderness is so great that intercourse is out of the question and pain is made severe even by such mild forms of exercise as walking.

Upon examination it is found that a tumor presents itself in the anterior abdominal wall, the same as that which exists in urethrocele. It is, however, more prominent than in the latter case and possesses distinct limiting outlines, while the urethrocele discloses a more or less indistinct bulging. The urethrocele disappears upon pressure very readily, while this is not true of the abscess, it decreasing in size only as the pus is slowly eliminated into the urethral canal. The tumor which is present in abscess is prominent and fluctuating while that which is present in the urethrocele is more or less elastic and compressible. The tenderness and pain which is produced upon pressure in the sub-urethral abscess, is not present in urethrocele, while the pain which is manifest during urination and defecation is much more severe in the former than in the latter.

Prognosis—The prognosis is favorable and the conditions should respond to adjustments very readily. By the restoration of normality in the lumbar vertebrae, the impingement upon the nerve fibers supplying the abscess is relieved and there is no longer an excess of secretion or a lack of reparatory impulses, which make for a purulent exudate. Further-

more, the impingement is relieved on the calorific fibers and in a short while Innate is enabled to completely restore the abnormal tissues to the normal state.

Tumors of the Urethra

Tumors of the urethra may occur as in other tissues and are variable as to the type which develops, dependent upon the degree and character of impingements which occur. Among the most common of these is that of urethral-caruncle, which is an hypertrophy, particularly of the soft, connective tissues lying close to the external meatus and which is marked by the great degree of vascularity in it. These tumors bleed very readily upon the slightest friction, due to the great degree of vascularity and to the dilatation of the vessels in the substance of the tumor. The external surface is rough in appearance and shows a raspberry like mass which is very red in color. It seldom attains a size greater than one inch in diameter.

Urethral polypi are of rare occurrence and are the result of an overgrowth of the connective tissues in the urethral wall which at first possess a sessile base but which later become constricted and develop a long pedicle. These polypi may develop at any age and may be extensive enough to protrude through the external meatus. They are essentially benign in character and produce no symptoms other than mechanical ones.

Condylomata are warty excrescences which develop in the urethral mucous membrane and which are papillary in character. They are usually associated with similar growths from the vulva and are, as a rule, found in gonorrhea.

Cysts of the urethra are not uncommon and are the result of occlusion in the mucous glands which produce a damming back of the fluids into the fundus of the glands. They project as small retention cavities into the urethral canal and sometimes become pedunculated.

Carcinomata and sarcomata are malignant growths which may occur in the urethra and may be either primary or secondary. They are, however, as a rule, secondary and are associated with primary growths in the vaginal wall. These are the most dangerous form of urethral tumors; not only from the fact that they are productive of general symptoms, but also because they involve a greater part of the urethral mucous membrane than any other type.

Prognosis—The prognosis of urethral tumors is dependent upon the character of the tumors which develops and, in the case of malignant growths, upon the degree of structural change which has taken place. If the center from which the tissues are developed has been destroyed, the restoration to complete normality cannot occur although under proper adjustments, the progress of the tumor may be arrested. The prognosis is also dependent, in these events, upon the general condition of the patient and the degree of vitality which she possesses following the deleterious effect of the toxins which are given off by the malignant tumors.

In the case of the benign growths, the prognosis is favorable, but the character of the growth and its duration determine in a large measure the length of time which will be required in restoring the condition to normal.

Cystitis

Definition—An incoordination of the mucous membrane lining the bladder characterized by the presence of excessive heat together with associated structural changes.

Etiology—Subluxations at L. P. P. and K. P. The subluxation in the lower lumbar region is a primary causative factor and while the incoordination is sometimes associated with other abnormalities, these conditions are merely of secondary importance and could have no effect on the lining

membrane were it not for the impingement of the nerve fibers supplying this tissue.

Congestion in the mucous lining of the bladder may be due to a number of incoordinations, such as the presence of pelvic or abdominal tumors which obstruct the circulation, or diseases of the ovaries, the tubes, or the uterus which serve, because of the structural changes, or the changes in their position, to produce a damming back of the blood in the bladder wall. Peritonitis and the normal congestion which is present during pregnancy and at the times of menstruation serve to congest the vessels, so if there is a lack of motor impulses being supplied to the walls, they may become permanently dilated and enlarged. Here, the nerve fibers which are impinged are of the motor variety and they allow for the expression of the congestion. This is associated, however, with excessive calorific impulses and the two abnormalities together, constitute a cystitis.

If there is a retention of urine in the bladder, the distention of the cystic walls produces a dilatation of the blood vessels and a structural change which predisposes to inflammatory alterations. This retention may be partial or complete and it not only serves to stretch the cystic walls, but also an irritation may be offered to it by the decomposition by the urine which is retained. The retention in the vesical usually results from tumors of the urethra, cystocele, or growths outside the vesical and urethra which serve to compress either of these two organs.

Abnormalities in the urine occur wherein this excretory material takes on an abnormal character, due to the inability of the cells in the uriniferous tubules to properly function. This abnormality is productive of the formation of toxins which are unusual in character and which, when they come in contact with the lining membrane of the vesical, act as an irritation. This, in itself, however, could not produce the dis-

ease, but it must be associated with an abnormality in the mental impulse supply to the vesical lining.

The formation of calculi in the bladder or the presence here of parts of pencil, wires or other instruments which may have been used in masturbation or which may have been retained after having been used to dilate the urethra, act as foreign materials which produce irritation in the vesical walls. Here, again is an associated condition which is not, in itself, a causative factor, but which is associated with lumbar subluxations which are productive of inflammatory changes in the bladder.

Foreign substances or pustule materials may gain entrance to the bladder either through the urethra, the ureters or through serous channels. Of these, the urethra is the most common channel whereby the toxic materials gain entrance; this because this canal is comparatively short and easily dilated. Inflammations occurring in the vulva give off suppurative material which, coming in contact with the mucous lining of the urethra, may even extend into the bladder. This can only occur, however, if the nerve fibers supplying the bladder wall are impinged in such a manner as to produce inflammatory changes which are made more severe by the presence of the toxic materials.

Occasionally adhesions are produced between the bladder and adjacent organs, and through the serous channels of these adhesions septic materials make their way to the lining membrane of the bladder. Particularly is this true if adhesions take place between the bladder and the intestine, but it may occur if the adhesions are formed with either the uterus or vaginal wall. Here, if inflammatory conditions exist in the latent form, due to the impingement of nerve fibers supplying the bladder wall, this inflammation is made active by the extension of the toxic material.

Because of the shortness of the urethra in the female and the fact that it is easily dilated to a marked degree, the possi-

bilities of drainage are greater than when the bladder of the male is involved with inflammation. As soon as the excretion is given off from the lining membrane it is drained from the bladder and does not remain here as an irritating substance to affect the lining membrane. The extent to which the bladder is affected is dependent upon the degree of impingement which occurs in the lumbar region and at K. P. The disease is divided into three varieties dependent upon the character and the extent of the inflammation. They are known as the mild, the severe, and the virulent forms.

In the mild form of the disease the tissues which are involved are only those of the vesical triangle or very small areas around the openings of the ureters. The lining membrane is congested and a slight exudate of mucus is found over the involved area.

In the severe variety the inflamed areas are scattered over the entire inner lining and there are patches of healthy normal tissue interspersed between them. Those parts of the mucous membrane which are involved disclose a swollen and hyperemic appearance which increases as the inflammation increases and the entire surface ultimately becomes covered with a profuse discharge, muco-purulent in character. Occasionally small patches of inflamed lining will break off and leave an underlying raw bleeding surface which gives rise to the presence of blood in the urine.

In the virulent type we have the most severe form of the disease wherein the inflammation becomes very severe from its inception and is very rapidly spread to involve the entire mucous membrane and the underlying structures of the bladder wall. When the inflammation becomes purulent, it is known as suppurative cystitis and in this condition, various sized abscesses are formed in the bladder wall. These abscesses may rupture into the cavity of the bladder and leave scar tissues in the wall upon the former site of the perforation. Occasionally they perforate the abdominal wall and discharge

their contents directly to the external. In that form of virulent cystitis where there is a yellowish-white membrane formed over the lining cells, the disease is known as diphtheric or exudative cystitis. This condition is associated with necrosis in the bladder wall and is one of the most severe forms which involves the entire wall of the bladder as well as the lining membrane.

The only distinction between this type of virulent cystitis and the other forms is that there is a greater degree of impingement in the more severe forms and a consequent more marked involvement of the tissues. In other words, not only those fibres which supply the lining membrane are impinged, but the sublaxations are extensive enough to involve also the fibers supplying the muscular and the peritoneal membrane so that they undergo inflammatory alterations as well as the lining. In the very severe forms the entire mucous lining may become detached from its underlying base and sloughed off into the bladder from where it is expelled to the external through the urethra. Occasionally parts of the muscular tissue are also given off in this manner and in very rare instances the entire wall of the bladder becomes a foul sloughing mass. In this latter event if the process continues, the disease terminates fatally, but if adjustments are given, so that the degenerative process is stopped, health may ultimately manifest itself.

The inflammation may extend to adjacent organs due to the transmission of septic materials through the serous channels which lead to these structures and due to the impingement on the nerve fibers which supply the walls of the adjacent organs. If these impingements involve an excess in the expression of calorific impulses and a deficiency in the expression of the nutritive and reparatory impulses, then inflammation will manifest itself. If, however, these sublaxations do not exist, the inflammation will not appear, despite the fact that septic materials are transmitted through them. The

kidneys may also become affected if the nerve fibers supplying them are involved by the proper subluxation, as the inflammation extends gradually through the ureters and into the pelvis, whence it may be transmitted to the substance of the kidney.

The disease may ultimately merge into the chronic stage wherein the inflamed area may be scattered over the mucous membrane rather than involving the entire structure. The area, however, which is usually involved continually during the chronic stage, is that of the vesical triangle. The rugae which are found in the lining membrane become congested in form and project into the cavity in the form of small polypi. The mucous lining is rather of a grayish-white color and continually gives off a purulent excretion. Due to the lack of motor impulses being manifest in the muscle fibers of the vessel walls which lie in the wall of the bladder, these vessels sometimes rupture and produce ecchymotic spots. These, in the beginning, are reddish in color but later change to a yellowish hue, due to the destruction and absorption of the haemoglobin.

Occasionally superficial ulcers are formed on the surface of the mucous membrane which are irregular in outline and present a jagged depressed border. If these ulcerations are deep the muscular coat is also involved and when this condition exists, blood will probably be discharged into the urine because the ulcerations are very apt to be susceptible to friction. Occasionally the only structural change is that of a single lesion in the form of a large ulcer and when this condition exists, it is known as simple ulcer.

Usually, however, in the chronic stages of the disease the muscular coat is hypertrophied and hard, due to the overgrowth of connective tissues and the later contraction which occurs in the connective tissue corpuscles. This hardening and thickening of the walls makes the bladder less distensible and as a consequence the contraction is more or less diminished. Occasionally the congestion of the mucous membrane

of the bladder gives rise to a constriction at the vesical opening of the ureters which dams the urine back into these tubes where it acts as an irritating substance on the mucous membranes. This condition, in itself, does not produce the inflammation, but if subluxations exist, which involve calorific, reparatory and nutritive impulses, it acts as an irritating factor and serves to make the already existing inflammation an active one.

Symptoms of the Mild Form in the Acute Stage—The symptoms of this disease are usually confined to localized manifestations and there is seldom a manifestation of any degree of temperature. There is a frequent desire to urinate and it is due to the fact that the mucous lining of the bladder is extremely sensitive to the urine which comes in contact with it. Although this symptom is not as marked in the mild form as in the more severe forms, still it is more or less constant and should be considered as one of the distinctive features. Burning sensations along the course of the urethra and around the vesical triangle of the bladder during the act of micturition and for a short time following the act is also a common symptom. It, however, does not continue for a long period after the urine has been expelled from the bladder and the patient may possess a certain degree of comfort between the periods of urination. Upon pressure, the lower part of the bladder discloses a tenderness and soreness which may be manifest even when pressure is not applied. In this event, however, it is more acute when the patient assumes the erect position than while she is in the recumbent position. The urine is highly colored and more or less opaque, with a specific gravity of 1.005 to 1.020.

Symptoms of the Severe Form in the Acute Stage—The symptoms in this form of the disease are both local and general. Frequent micturition is a characteristic symptom and is much more severe in this form than in the mild type of the disease. Vesical tenesmus manifests itself and is very acute

and agonizing. Occasionally the muscular contractions of the bladder are so severe and constant that they require the patient to remain for hours upon the urinal. This vesical tenesmus may be relieved after urination, but it often remains as a constant symptom. Being present the patient makes violent efforts to expel the urine and this causes more or less congestion in the pelvic vessels which manifests itself by severe pain. Soreness is felt in the region of the bladder which may radiate through the entire pelvis and even into the thighs. This soreness is more acute when the patient is in the erect position than while in the recumbent position and it is made more severe when the bladder is filled with urine than when it is empty. While in the recumbent position, both thighs are usually flexed in order to relax the abdominal muscles and produce less tension upon the bladder. Haematuria is a common symptom and it is usually manifest by the expulsion of a few drops of blood after the act of menstruation. Occasionally the urine possesses a slight discoloration, due to the presence of blood in its substance. It also contains mucous and epithelial cells and pus cells. If a specimen of the urine is allowed to stand, a sediment forms which is yellowish-white or reddish in color, due to the substances which are contained and the odor is extremely foul.

Although there is an increase in the temperature this elevation is not as severe as in the virulent type of the disease and it may or may not be preceded by a chill. If a chill occurs, at the beginning, it seldom manifests itself again during the course of the disease. The increase in the pulse rate is noticeable, but is not as marked as in the virulent type of the disease and varies, dependent upon the elevation in the temperature.

Symptoms of the Virulent Type in the Acute Stage—This disease is also distinguished by the presence of both local and general symptoms which are more severe than in either of the other two forms. The disease is particularly apt to occur in

puerperal women and is associated particularly with the extension of an infective inflammation from some adjacent organ. Frequent urination is present here and is more severe than in either of the other two forms. Haematoria is also found and frequently the rupturing of large blood vessels in the wall of the bladder gives rise to extensive hemorrhages. Particularly is this apt to occur if the disease is of the exfoliative or diphtheric type. Vesical tenesmus is extremely severe and is more or less of a constant symptom. The pain is present continuously and radiates through all parts of the pelvis and into the thighs, being even more severe than that which occurs in the severe type of the disease. This symptom causes the patient to lose sleep and rest, to such a degree that emaciation usually develops. This emaciation and loss of strength is also due to the intense suffering which accompanies the disease. Upon examination it is found that the urine contains large quantities of pus, mucous and blood cells with shreds of mucous membrane. Retention of urine may manifest itself as the result of an occlusion of the urethra. This occlusion occurs because masses of the exfoliative membrane find lodgment at the base of the bladder and occlude the canal.

The disease is ushered in by a severe chill, as a rule, which recurs during the course of the attack. Following the chill, there is an increase in the temperature which sometimes attains a degree of 104 or 105 degrees. As the temperature increases the pulse rate also increases, becoming more and more frequent as the disease becomes more and more grave. As the condition progresses, the urine becomes decreased in quantity and ultimately uremic symptoms are manifest. Usually the typhoid status supervenes and we have the existence of the dry, parched tongue, carphologia, subsultus tendinum and delirium. The headache is very severe; gastro-intestinal symptoms manifest themselves, until the disease finally terminates in a profound coma.

Symptoms of the Chronic Stages—In the chronic stages

of the disease there are both local and general symptoms which manifest themselves and they do not vary in great degree from those found in the acute form of the disease. Frequent micturition is a common symptom together with vesical tenesmus and pain. The tenesmus and pain are not extreme and agonizing as they are in the acute stages, and although the frequent micturition is a disturbing symptom and serves to break the rest of the patient, it is not as severe as in the acute form. The urine is highly concentrated and possesses a deep color, together with a very fetid odor. When allowed to stand, it shows a precipitate of a yellowish-white color, or perhaps a reddish color. The reddish discoloration here, however, is not as common as in the acute form, due to the fact that vesical hemorrhages are not so apt to occur. The urine contains pus, mucous and epithelial cells and perhaps small particles of connective tissue.

Neurasthenia is a general symptom together with a general emaciation and loss of strength. The former is due to a constant pain to which the patient is subject, while the latter is due to the lack of rest, the extreme suffering and to the fact that toxic materials are continually being given off through the excretory channels to be eliminated from the body.

Prognosis—The prognosis is favorable, but the length of time required to affect a complete restoration to normal is dependent upon the form of the disease; if it is mild in character, the time required is comparatively short, while in the more severe forms where much structural change has occurred, the time required to restore normality is much greater. This is for two reasons: In the first place, the subluxations are more marked and a greater length of time is required to restore them to the normal and for Innate to restore a proper degree of tonicity in the ligaments of the spine which hold them in their proper position. Further, after the vertebrae have been restored to their proper alignment, time is required

for Innate to build up normal tissues in place of those which have developed in the abnormal conditions. When there is a destruction of tissue centers in the virulent form and where the mucous lining has been completely discharged from the bladder and its place taken by connective tissues, complete normality can never exist because the centers from which development takes place are absent. Further, it must be remembered that the emaciation and weakness are the result of the retention of toxins in the system and that this retention tends to lower the vitality of the patient so that in the latter stages of the virulent form there is little left to build upon. Here the restoration of normality is necessarily very slow and rapid results should not be expected.

Contraction of the Bladder

Definition—An incoordination wherein the lumen of the bladder is decreased, due to structural changes in the bladder wall.

Etiology—Subluxation at L. P. P. with a possible combination of K. P. If the impingement is of such a character, that there is an excessive expression of expansion impulses, the muscular and connective tissue cells become increased in quantity and as a consequence there is a hypertrophy and thickening throughout the entire wall. If the impingement involves the motor fibers so that there is an excessive expression of motor impulses, there is an extensive contraction of the muscle fibers to such a degree that the lumen is materially decreased. If nutritive impulses are deficient in quantity or quality the cells become decreased in size and atrophy manifests itself. The condition of the loss of elasticity in the bladder wall may be preceded by an attack of cystitis, after which the excessive calorific impulses are no longer present but those of excessive expansion still remain. The basis of the incoordination is the loss of elasticity in the bladder walls, wherein

they fail to dilate as the bladder fills with urine. As an adaptive feature the elasticity and dilatibility of the walls may be lost during the course of a chronic cystitis, wherein the condition of the mucous membrane makes it imperative that the patient expel the urine at short intervals. This naturally does not give time for the bladder to become entirely filled with urine and because of disuse Innate adapts herself to the changed conditions and the type of tissue existing in the bladder walls becomes altered. The disease is often associated with the presence of vesical neoplasms or calculi. This because the presence of these foreign materials are productive of inflammatory changes in the bladder wall and because the continual efforts of Innate to expel the foreign materials results in a state of chronic contraction wherein the distensibility is lost. It must be remembered, however, that even where these foreign bodies are present in the bladder, it is necessary for sublaxations to exist which involve the mental impulse supply to the bladder wall, in order for the incoordination to manifest itself. Further, the calculi themselves or the neoplasms, are the result of sublaxations existing in the lumbar regions, which same sublaxations may manifest themselves by inflammatory changes.

Symptoms—The symptom of frequent micturition is the only constant one which exists. This frequent desire to urinate is not due entirely to an irritability in the bladder wall, but may be the result of the contraction in those tissues constituting the wall so that even when small quantities of urine accumulate, they give rise to the desire for micturition. The degree then, of structural changes which have taken place in the bladder determine the severity of this important symptom. If the elasticity and distensibility are entirely lost, the amount of urine which can be accommodated is very small and the patient is compelled to use the urinal very frequently. If, on the other hand, structural changes are not marked, the patient may be able to retain a fairly large quantity of urine before

the desire for micturition is manifest. The pelvic soreness which is associated with cystitis is not present where inflammation does not exist in the bladder, even though the capacity is materially lessened. Further, the act of micturition is not associated with pain and tenesmus, as it is in inflammatory changes.

Prognosis—The prognosis is favorable and depends upon the restoration of the vertebrae in the lumbar region to the normal condition. A decreased capacity of the bladder is often associated with cystitis and the symptoms of the former should not be confused with those of the latter. A decrease in the capacity, however, is sometimes dependent upon the structural changes that occur during cystitis and as a consequence, the prognosis of the latter is somewhat concerned with the prognosis of the former. It is not only necessary to allow time for the restoration of the vertebrae to their normal position, but time must also be allowed in which Innate may repair the structural changes that have occurred during the course of the disease. This occurs, however, usually within a short time after the subluxations have been reduced and Innate is allowed to send normal impulses to the diseased tissues.

Vesical Calculus

Definition—An incoordination characterized by the formation of more or less solid bodies from the urine which is contained in the bladder, which may or may not obtain a sufficient size to produce pain while being eliminated.

Etiology—Subluxations at K. P. and at P. P. The disease, as a rule, is the result of excessive heat being manifested in the wall of the bladder together with abnormalities in the secretory cells of the kidney, wherein they fail to produce urine of the proper constituents. The condition is a comparatively rare one in women and when the calculi do form they are often readily expelled through the urethral canal before they attain

sufficient size to produce noticeable symptoms. The calculus may either be a primary or a secondary one, depending on where it originates. If it originates in the pelvis of the ureter and finds its way from here to the bladder, it is, as a rule, immediately expelled through the urethral canal and is not classified as a vesical calculus. When, on the other hand, it originates in the pelvis of the ureter and after its expulsion into the bladder it offers itself as a nucleus around which there is a further accumulation of urinary salts, the growth is known as a secondary calculus. If, however, it originates and develops entirely within the cavity of the bladder, it is known as a primary calculus. Sometimes the disease is preceded by the formation of a cystocele, which acts as a sac in which quantities of urine gather, and which here deposit a sediment which offers itself as a nucleus around which the stone forms. Finally it may be said that a vesical calculus may be produced merely by the existence of excessive heat in the mucous lining of the bladder which serves to absorb large quantities of fluid materials of the urine, leaving only the more solid elements which settle at the base of the cavity, where the urinary crystals organize themselves into a small mass. The size of this mass depends upon the length of time in which it is allowed to accumulate and this, in part, depends upon the degree of tonicity in the bladder wall and the ability of Innate to expel all the substance contained in the bladder.

Symptoms—The symptoms are not distinctive and they are usually closely allied with the symptoms of cystitis. Frequent urination occurs as the result of the constant irritation of the mucous membrane by the retained mass and the consequent congestion and loss of tonicity which exists in the bladder wall as a result of this irritation. Difficult urination sometimes manifests itself as the result of a partial or complete occlusion of the urethral canal by the calculus. In these events they change in their positions or a manipulation of the abdominal wall may serve to alter the location of the stone

in such a way that urination may be accomplished. Occasionally, vesical tenesmus and pain during urination are marked symptoms, particularly if the disease is associated with a severe cystitis. The presence of blood in the urine is not an uncommon symptom and it usually manifests itself by the appearance of a few drops after the act of micturition is completed. Associated with the pains which are distinctive of cystitis, there is a constant dull, heavy ache in the region above the pubes which often radiates from here to the other generative organs and even into the thighs. This soreness is particularly manifest in the vulva. The bladder may become extremely sensitive to pressure if the calculus is of such a shape as to produce abrasions on those parts of the mucous membrane with which it comes in contact. In these events, also, there may be lancinating pains in the bladder, following urination.

Prognosis—The prognosis is favorable and depends upon the restoration to normality of the bladder and the kidneys. In the case of the bladder it is necessary to eliminate the extreme heat which is present in its walls and which serves, together with the abnormalities in the urine to produce the abnormal formation. Normality must also be restored so that the kidney may function properly in taking from the fluids, which come in contact with its secreting cells, only those materials which are essential in the formation of normal urine. This means that the impingements on the secretory nerves supplying the kidneys must be relieved while the impingements in the lower lumbar region, which are productive of excessive heat here, must be relieved in order that normality may manifest itself in both of these organs.

Neoplasms of the Bladder

Definition—An incoordination of the bladder characterized by the excessive growth of the tissues constituting the

bladder wall, with various forms of secondary changes occurring therein.

Etiology—Subluxations at K. P. and at L. P. P. The neoplasms of the bladder are classed as primary growths and secondary growths, dependent upon their origin. If they first make their appearance in the wall of the bladder, they are called primary, while if they first appear in some one of the adjacent organs and extend to the bladder by metastasis or continuity, they are called secondary growths. Even in the secondary growths it should not be lost sight of that the subluxations affecting the bladder wall are necessary in order that the tumor may manifest itself here. Primary growths are exceedingly rare and are much less frequent in women than in men. Secondary growths, on the other hand, are of greater frequency in women than in men and are much more common than primary tumors. These secondary growths are very often the result of an extension to the bladder of a carcinomatous tumor which originates primarily in the cervix and extends from here to the anterior wall of the vaginal canal, whence it involves the bladder.

The character of the subluxation and the type of nerve fibers which are impinged, determines the character of the growth which manifests itself. Fibromata and myomata are an uncommon occurrence in the bladder, but when they do appear, they may possess a sessile or a pedunculated base. Usually single, cases are on record where they have existed in the multiple form and sometimes they project to the external where, undergoing inflammatory changes, they give rise to adhesions which result in peritonitis. There is always a possibility of this form of tumor undergoing myxomatous degeneration. It is not necessary to state that this particular type of tumor develops if those expansion fibers which supply the muscle and white fiber cells become involved and this involvement manifests itself by an excess in their activity.

Small fatty tumors of the bladder sometimes manifest

themselves, although the condition is an extremely rare one and it occurs in those cases where the expansion fibers supplying the fat cells are excessively active.

The most common type of neoplasm found in the bladder is that which takes on the form of a papillomatous growth. The character of this papillomatous growth is variable, being sometimes malignant and sometimes benign, but in any event, the growth projects toward the center of the vesical as a papilla. The benign form of tumor may grow very slowly and be existent in the bladder for years without causing undue structural alteration which give rise to any particular symptoms. The growth may be attached by a narrow pedicle and is always subject to secondary changes, as are all benign tumors. The malignant growths, on the other hand, are always possessed of a broad base and the wall of the bladder, around which they are situated, becomes indurated with connective tissue and serum and the secondary changes manifest themselves comparatively early in the disease. It should be noted here, also, that the rapidity of the growth in the malignant tumors is much greater than that of the benign tumors. Further, there is always a possibility of the malignant growths spreading to adjacent or remote organs, either by continuity or by metastasis. Whether the growth is benign or malignant is determined by the nerve fibers which are impinged by the causative subluxations. If only expansion fibers are involved, the growth is a benign one and so remains throughout its entire existence. If, however, nutritive and reparatory fibers are involved, as well as expansion fibers, and if the expansion fibers give rise to an extreme activity, the growth becomes malignant in character, developing very rapidly and disclosing very rapid secondary alterations.

Symptoms—Early in the disease, there may be no symptoms of consequence manifesting themselves, and the patient may possess a vesical tumor of the benign form for a long period of time, without being aware of its existence.

In the later stages, however, several distinctive symptoms are present and among them is haematuria, which is one of the most constant and distinctive symptoms of the disease. The first knowledge the patient possesses of any abnormality existing in the bladder is the appearance of blood through the urethra. This appearance may manifest itself without being associated with undue pain or discomfort. Its appearance takes place suddenly and it manifests itself at intermittent periods, perhaps for only a few weeks, or perhaps indefinitely. If the tumor is benign in character, the blood makes its appearance in the form of a few drops after the act of micturition, while if a malignant growth is present the hemorrhage is more severe and usually occurs following some special activity. The loss of blood, if it takes place in large quantities, gives rise to a general sensation of weakness and if it is extremely severe, symptoms of shock may occur. In neither the benign nor the malignant tumors is the escape of blood necessarily associated with pain, although in the malignant tumors pain is more often an associated symptom.

It is seldom that the passage of urine from the bladder to the external is obstructed by the tumor, but occasionally when secondary changes are taking place, minute fragments may find lodgment in constricted parts of the tube, so that the urine does not find a free passage to the external. Occasionally, if the tumor is a benign one, it is pedunculated and if in a location near to the internal opening of the urethra, it produces a ball-valve action here, which intermittently stops the flow of urine. If an obstruction has occurred, there is more or less vesical tenesmus and sometimes great effort is required on the part of the patient to expel the urine.

Cystitis is a common disease associated with neoplasms of the bladder and it occurs as the result of an excessive expression of calorific impulses in the mucous lining of the bladder, together with a continual irritation of the growth on the internal wall. The association of cystitis with neoplasm is

more apt to manifest itself if the growth is a malignant one than as if it is benign in character. Although it may occur in the benign character, it is, in these conditions, less severe. When cystitis is associated with the presence of a neoplasm there is more or less general involvement of the patient's health, due to the excessive work which is thrown upon the excretory organs of the body in eliminating the many toxins which are produced by the inflammatory changes.

Pain is not a constant symptom of vesical neoplasms, although it is constant when these growths are associated with cystitis. The tumor itself may give rise to painful symptoms, particularly if it is of the malignant character and when these pains do exist they may radiate into the adjacent organs of the pelvis and be manifest there.

One of the most characteristic and distinctive symptoms which is associated with this disease, is that of the presence in the urine of small or large masses of the neoplasm. Examination under the microscope reveals the presence of these expelled tissues, although it is very difficult to arrive at a conclusion as to the character of the growth by such an examination. This is very largely because the cells, being in contact with the urine, undergo degenerative changes to such a degree that they are not characteristic.

Frequent micturition is not a distinctive symptom of neoplasms and in fact, seldom occurs except where the disease is associated with cystitis. If, however, the growth is present in the floor of the bladder, there may be an associated involvement of the urethral opening and a marked decrease in the size of the cavity. When this condition exists frequent micturition is a symptom even when there is no associated cystitis. If a malignant tumor is present, the infiltration of the tissues into the normal structure of the bladder wall serves to decrease the elasticity and distensibility of the wall so that it cannot accommodate any great amount of urine. When these structural

changes are manifest, frequent micturition is also an associated symptom.

Benign tumors of the vesical seldom interfere with the general health of the patient, unless there is an associated cystitis, or unless because of their peculiar location, they interfere with the function of the kidney and produce abnormal conditions there. If malignant tumors, however, are present, the disease manifests itself by the general symptoms of cachexia, together with a general emaciation and loss of strength, particularly in the later stages of the disease.

Prognosis—The prognosis is favorable and is determined by the character of the growth which is manifest. In malignant tumors the length of time required to effect a complete restoration to normal is greater than as if the tumor is a benign one. This, because of the fact that malignant tumors of the bladder are usually secondary in character and are associated with extensive structural changes, not only in the wall of the bladder, but also in the adjacent organs which are involved by the malignant growth. With malignant tumors there is always a possibility of the centers from which development takes place, being destroyed, and thus Innate is then incapable of utilizing these centers as a nucleus to build from. It must further be remembered that in malignant tumors, either in the bladder or any organ in the body, the general effect upon the patient's health must be considered in offering a prognosis. If the vitality of the patient is materially decreased, there is not the possibility of as rapid restoration to normal as when the general health is unaffected. Even in malignant growths, however, if the patient comes under the care of a Chiropractor in the early stages of the disease, the prognosis is eminently favorable and it is only in those cases where the disease is far progressed and the destruction of tissue is so extensive that there is nothing left to build upon that the practitioner need have any fear of the ultimate results. In the case of benign tumors the prognosis is more favorable and

the only question here is the length of time which will be consumed in restoring the tissues to the normal. If the tumors are soft, and if they are small, the restoration is comparatively rapid. While, if they are composed of harder tissues and are comparatively large, the restoration is much slower. Here it is not only a question of restoring the vertebrae to their normal position, but allowing time in which Innate may tear down the abnormal structures and replace them with normal ones.

Stricture of the Ureter

Definition—An incoordination in the ureter characterized by a decrease in the size of the lumen.

Etiology—Subluxations at P. P. and sometimes an association with a K. P. subluxation. Ordinarily, stricture of the ureter results from cicatrices which have been formed by ulcerations during the course of ureteritis, or the progression of a renal calculus through the tube. This stricture may be partial or it may be complete and it may occur in any part of the canal, although it is more apt to be near the lower end. Sometimes only one stricture is present, while in others several may exist. It will be noted that in the above we have designated two conditions which precede the formation of a ureteral stricture. If, however, the tissues of the ureter were in a normal condition, the excessive contraction would not take place in the wall even though ulcerations had manifested themselves and even though injuries had been produced by the passage of the renal calculi. Many cases are on record where injuries have occurred in the ureter and where ulcerations have been formed, which have not left the cicatrix in such a condition that the stricture was produced. In other words, if the normal reparatory impulses are present and if there is not an excessive expression of motor impulses to produce contractions, the stricture will not be formed.

Symptoms—These are dependent upon the degree of ob-

struction and upon the conditions which are associated with the stricture. Where the occlusion is incomplete, there may be no manifestations which are abnormal, but if it is complete and dams the urine back into the kidney, symptoms of hydro-nephrosis are ultimately manifest. When this condition occurs the urine which is expelled by way of the bladder and the urethra, is diminished in quantity and the sudoriferous glands of the skin are excessively active in order to adapt the excretory system to the changed conditions. Pain may or may not be felt along the course of the ureter and its presence depends upon the degree of occlusion which is present. If the occlusion is complete, the kidney is very tender upon palpation and general septic conditions may manifest themselves, due to the accumulation of pus in the tissues near to the stricture. This, however, only occurs when an inflammation is associated with the stricture and particularly when this inflammation is septic in character. Where this condition exists, a rapid pulse, together with an increase in the temperature and a general bodily exhaustion are present.

Prognosis—The prognosis is favorable, particularly if the stricture is one of short standing. Here the abnormal changes have not taken place to such a marked degree and the connective tissues have not undergone the extensive contractions which they manifest in the later stages of the disease. If the subluxations are reduced at this time, Innate is enabled to supply the involved tissues with normal impulses so that normality may be restored in them and so that the abnormal tissues may be destroyed.

Calculi

Definition—An incoordination characterized by the presence of a solidified mass of urinary salts in the ureter.

Etiology—Subluxations at K. P. and at P. P. This condition is not so commonly met with in the ureter as it is in the

pelvis or in the bladder. In the majority of cases, the nucleus at least, of the calculus is formed in the pelvis and progresses from here through the urethral canal which becomes smaller toward the inferior and ultimately the calculus finds lodgment. In rare cases, however, the nucleus may originate from the ureter and the stone be completely developed here from the urinary salts contained in the urine. The disease is dependent upon the abnormalities in the lumbar region, which are productive of excessive heat in the walls of the ureter, which serves to produce the accumulation of the solid materials of the urine. It is also dependent upon subluxations at K. P., which are productive of abnormalities in the cells lining the uriniferous tubules wherein they are not capable of taking from the fluids which bathe them, the necessary constituent elements for the formation of normal urine. The alterations which take place in the tubes are dependent largely upon the size and the shape of the calculus. In some cases the calculus is small and does not interfere with the passage of urine through the tube, while in other cases it is large enough that it dams back the urine into the pelvis and produces a dilatation here and in fact of the entire ureter above the point of obstruction. This gives rise to the two conditions of hydroureter and hydronephrosis. If the condition is associated with an involvement of calorific impulses supplying the walls of the ureter, an inflammation manifests itself here, which may, in the later stages become purulent in character, and in this event the substance which is dammed back is largely composed of pus. This condition is known as pyoureter or pyonephrosis. Where an obstruction occurs in only one of the ureters, the kidney becomes atrophied because of its nonuse and its function may be ultimately impaired or altogether destroyed. Ulceration may occur in that part of the wall of the ureter where the calculus finds lodgment and this ulceration may produce a fistula through the wall which will allow for the escape of urine outside the wall of the ureter.

Symptoms—The symptoms are classified as acute and chronic dependent upon the degree of abnormality which is produced by a calculus. The chronic symptoms are those which manifest themselves when the calculus finds lodgment and remains for some time in the ureter.

Under the acute form the most distinctive symptom is that of very severe colicky pain which is very often lancinating and agonizing in character and is produced by the passage of the calculus through the tube. Associated with this excessive pain there is a very rapid pulse together with gastro-intestinal symptoms, principally manifest by nausea and vomiting. The symptoms of collapse sometimes occur as the result of excruciating pains which occur during the passage of a calculus through the tube. Occasionally the symptoms of chills and fever are manifest. If, during the course of its passage, the stone finds lodgment in the ureter, the urine is diminished in amount and the condition produces a damming back of the fluid into the pelvis, which gives rise to a more or less fluctuating mass felt in the region of the kidneys. The location of the pain varies as the stone progresses along the course of the tube and it gradually assumes a lower level in the pelvis. These attacks of colicky pains which are the result of the passage of calculi through the tube, are often associated with haematuria, which, in turn, is the result of the injury of the blood vessels contained in the walls of the ureter. As the stone passes those points in the ureter where the lumen is particularly narrow, it finds difficulty in forcing a passage and as a result, severe abrasions are sometimes made in the mucous membrane.

In those cases where the stone finds lodgment and remains for a long period of time, symptoms may be classed as chronic and are characterized by the presence of a pain centered in the location of the stone. This pain, however, is not acute and agonizing as it is in the acute form, but is rather of a dull, aching character. If the passage of urine is interfered

with by the presence of the calculus, the symptoms of hydroureter and hydronephrosis manifest themselves. It is particularly in these conditions that septic inflammation may occur, which results in the manifestation of symptoms indicating a general septic condition. The ball-valve action which is often present with an impacted calculus, gives rise to the condition known as intermittent hydronephrosis, because there are times when the escape of urine through the tube is not interfered with.

Prognosis—The prognosis is favorable in either the acute or chronic forms and in both cases the patient responds, as a rule, very readily to the adjustments. The restoration of the vertebrae in the lumbar region to the normal condition, allows Innate to manifest itself by expressing a complete normality in the walls of the ureter, thereby allowing them to undergo adaptative changes and relax to a degree even greater than the normal. Thus, the calculus which is impact in the tube readily makes its exit from there into the bladder and the symptoms are no longer present.

Obstruction of Ureter From External Pressure

Definition—An incoordination wherein the lumen of the ureter is either in part or entirely occluded due to pressure or traction upon it, resulting from pathological conditions in the surrounding structures.

Etiology—Subluxations at L. P. P. and perhaps K. P. The etiology is variable, dependent upon the character of the structural changes which are productive of the obstruction. If a pelvic tumor exists in any of the surrounding tissues, it is the result of the expression of an excessive quantity of expansion impulses, which abnormality may be associated with abnormalities of other impulses of other types. The occlusion may be the result of inflammatory exudate which serve to decrease the lumen of the canal or it may be due to the infiltration of

malignant growths. The majority of these extend from the bladder into the canal of the ureter, being, as a matter of fact, secondary growths in the bladder with the original location in the cervix of the uterus. It is very possible that adhesions form between the ureter and the surrounding organs and if such is the case, a contraction of the connective tissue cells constituting the adhesions, gives rise to the partial or complete occlusion. Any tumors of the bladder which are located on the superior wall may extend from here and either displace the ureter or produce direct pressure upon it in such a way as to occlude its opening. If calorific impulses are in excess in the wall of the bladder, and if this is a chronic condition, there is a thickening of the bladder wall associated with the abnormality in the ureter and it acts in such a way to produce torsion of the tube and decrease the size of its opening.

The condition is usually a bilateral one, because the most common associated conditions are those which involve both tubes. This is true in the infiltration of malignant growths and in the pressure which results from tumors developing in adjacent pelvic organs, particularly the uterus. There are cases, however, where the condition is unilateral and the function of the opposite ureter is not affected in any way. In the majority of cases the obstruction takes place at the lower end of the tube because the structural changes which are productive of it are more apt to occur in the pelvis than in the abdomen.

Symptoms—The symptoms are usually hard to differentiate from those which are associated with the structural changes on the external and which are productive of the occlusion of the tube. Particularly is this the case when the obstruction is the result of the development of either malignant or benign growths of the cervix or the uterus. If both ureters become completely occluded, the urine is dammed back into the two sinuses so that the symptoms of uremia are

apt to manifest themselves. In these cases the tumors can be palpated in the region of the kidneys as elastic enlargements, particularly where the obstruction is severe. The pain is also very severe and unless relief is procured within a comparatively short time, symptoms of uremia occur and death supervenes.

Prognosis—The prognosis is entirely dependent upon the surrounding structural abnormalities and the prognosis of these latter determine the results which can be expected upon the occlusion. If the occlusion is due to the presence of a malignant growth either in the wall of the ureter or in some surrounding structure, the prognosis is favorable in the early stages of the disease, but less favorable if destructive alterations have occurred in the centers from which development takes place. The general health of the patient also is materially concerned in the prognosis and the vitality which is available for Innate to use in the reconstruction of destroyed materials must be considered. If the obstruction is the result of the development of a benign tumor or if it is the result of adhesions or inflammatory changes, the prognosis is more favorable and results should be procured in a comparatively short time.

Ureteritis

Definition—An incoordination of the ureter characterized by excessive heat and an excessive secretion.

Etiology—Subluxations at K. P. and at P. P. The disease results from the excessive expressions of calorific impulses which is very often associated with an excessive amount of secretory impulses and a deficiency in the nutritive and reparatory impulses to the wall of the ureter. Very often the condition is preceded by an inflammation of the bladder or of the kidneys. In the former condition septic materials from the

bladder pass upward from the affected areas, either in the lumen of the tube or in the tissues of the wall and the inflammation which is present in the latent form is thus made active. The same condition exists where ureteritis is preceded by inflammation in the kidney. Here the transmission of toxins is more apt to take place through the lumen of the tube than through its walls. It should not be understood that the presence of toxins are in themselves sufficient to produce inflammatory changes, but when associated with impingements on those nerve fibers supplying the ureter wall, the disease manifests itself. Some cases of ureteritis occur as primary conditions without being preceded by inflammation of the bladder or of the kidneys. Here the condition is directly due to subluxations in the lumbar region which are sufficient to produce an active inflammation instead of a passive one.

This disease is either acute or chronic, dependent upon the character and the extent of the subluxation which exists and upon the nerve fibers which are involved. In the acute form there is hypertrophy of the walls, due to the excessive expression of expansion impulses, and there is also a congestion of the mucous membrane due to lack of motor impulses being supplied to the circular muscle fibers of the arterioles. This allows for an excessive pressure in the capillaries and the fluids find their way into the surrounding tissue, where they remain and produce a swelling of the organ. In the chronic form there may be a contraction of the connective tissue corpuscles and fibers in the wall, or a relaxation of these fibers, due either to an excess or a deficiency in the motor impulses. This results either in a decrease of the size of the ureter or a dilatation of it. Where there is a dilatation of the ureter the tube becomes elongated and tortuous, due to its overgrowth. This excessive pressure makes the wall comparatively thin. Where there is excessive expression of motor impulses in the wall of the ureter, the issues become con-

tracted and lose their dilatability and elasticity, becoming thickened and hypertrophied. In these events the lumen of the tube is decreased not only by contraction of the connective tissues, but also by an overgrowth of the walls. It may be that the fluids given off from the capillaries are forced to the outer wall of the ureter, where they undergo organization and form adhesions with the adjoining organ.

Symptoms—Very often the symptoms are not distinctive because of the associated inflammation in the bladder or the kidneys. Pain is present if the ureteritis is severe and is felt along the course of the tube. The presence of pus in the urine in those cases which are septic in variety is a symptom that is not distinctive because pus cells may be found in any of the inflammatory conditions along the urinary tract. Haematuria is also a symptom of the disease, but is not distinctive for the same reason.

In those cases which are chronic, the disease is usually associated with a chronic cystitis and the symptoms of the latter are so merged with those of the former that it is difficult to differentiate them. Practically the only symptom that is present in ureteritis of the chronic form that is not present in cystitis is the presence of pain along the course of the tube, which, in the case of the chronic disease, is not particularly severe.

Prognosis—The prognosis is favorable, dependent upon the release of impingements on the nerve fibers supplying the ureteral wall and upon the structural changes which it is necessary to repair in the wall of the ureter. If the disease is a purulent one, it is indicative that the subluxations are more pronounced than as if it is simple and consequently a greater length of time is required to restore the vertebrae to their normal positions. However, in any event, the prognosis is favorable, but in some forms of the disease a greater length of time is required to restore coordination.

CHAPTER IX.

SYPHILIS

Definition—An incoordination constitutional in its nature and chronic in its course, characterized by the appearance of a hard chancre, and the syphilides.

In General—The pathological expression of syphilis is very extensive and is not necessarily confined to the generative organs, but may involve every organ or tissue in the body. The extent to which these pathological alterations are manifest is dependent upon the degree of subluxations present in the individual and the consequent resistance which the patient is able to offer to the toxins.

It is necessary that subluxations exist which decrease the function of elimination in the body in order that the syphilitic toxins may find lodgement and produce deleterious effects. Investigators formerly believed that syphilis was the result of a syphilitic virus in the form of a microorganism. More recent investigators, however, have discovered that individuals entirely free from syphilis possess, in their tissues and excretions, bacilli which resemble, both in their reactions and in their appearance, the so-called syphilitic bacilli. Whether the toxin is in the form of a microorganism, the excreta of the microorganism or some other independent virus, makes no particular difference. The fact remains that if the excretory functions are normal, the virus will be expelled from the body and cannot, of itself, produce the disease. On the other hand, it may be said that all individuals who possess subluxations which hinder the activity of the excretory organs are susceptible to the action of the syphilitic virus, in which event the subluxation can only be classed as the causative agent.

Modes of Transmission—It is the general concensus of opinion at the present time that the syphilitic virus cannot gain entrance to the body except through an abrasion, perhaps microscopical in size, on the skin; or through direct contact

with a sensitive mucous membrane. It is not necessary that the individual suffering from syphilis come in direct contact with another individual in order for the virus to be transmitted from one to the other. This virus may be deposited upon any intermediary object and be thus transmitted to the other individual. The general conception of syphilis is that it is an essentially venereal disease. This, however, is not true, insofar as the virus may be transmitted from one person to another through other mediums than the generative organs. It must be admitted that the most common mode of transmission is from the mucous membrane of the generative organs in one individual to the mucous membrane of the generative organs in another; however, the syphilitic virus may be transmitted, through the act of kissing, or, in the case of infants, from the syphilitic lesion on the breast of a nurse. Again, cases are on record where the initial lesion of syphilis has made its appearance on the breast of a previously healthy nurse from mucous patches in the mouth of a syphilitic infant. Many cases are on record where the syphilitic virus has been transmitted from one to another by common use of toilet utensils, dishes, clothing, towels, etc. Vaccination is a very common mode of transmission for the syphilitic virus, particularly in the old technique where the serum from the arm of a syphilitic individual was transferred to that of a healthy individual. This latter has occurred in cases where there is absolutely no blood transferred from one to the other, which leads us to the conclusion that the syphilitic virus is present in the serous system of the body, as well as in the blood stream.

Etiology—The etiology of syphilis consists in subluxations at K. P. with a possible association of a subluxation in the local area where the primary lesion first makes its appearance. For instance, if the initial lesion first appears in the mouth, it is indicative, as a rule, of a lack of resistance offered by the mucous membrane here and a consequent absorption of the virus rather than an adaptative process whereby its effect would be neutralized. The subluxation at K. P. affects

the entire excretory system and upon examination it would be found that many toxins are being retained in the body which decrease the general resistance and impair the functions of many organs. The fact cannot be denied that in order for the disease to become a constitutional one, wherein all the organs are more or less affected, it is necessary for the virus to be introduced by some means. However, the fact that many individuals are known to transmit the virus from one individual to another without themselves suffering from the disease is proof in itself that something more than the presence of the toxins is necessary to produce syphilis. In other words, that the general bodily condition is the primary factor and that the existence of toxins which make this latent condition an active one is only a condition to the expression of the disease.

Symptoms—The disease of syphilis is distinctive in that it possesses certain definite stages in the manifestation of its symptoms. These stages of manifestation are not constant in all cases, yet the general division may be made into four groups, each of which is more or less distinct from the others. The first period is known as the period of incubation and is that time which is consumed between the introduction of the syphilitic virus and the expression of the primary lesion; this stage lasts three or four weeks. This is followed by the second stage, wherein the primary symptoms make their appearance, and this stage, as a rule, occupies from six to eight weeks; this is also spoken of as the period of secondary incubation, because at some time during this stage, generalization of the virus takes place and the disease, upon becoming constitutional, enters upon the third stage, or the stage of secondary symptoms. During the third stage, the principal characteristics are those of eruptions on the skin, on the mucous membrane, or both. The distinctive feature about the eruptions in this stage is in the fact that these eruptions are not constant, but make their appearance intermittently as

successive groups. The duration of this stage is extremely variable, lasting only a few months or perhaps several years. It is followed by a lull in the expression of the symptoms, which may mark the definite termination of the disease. This lull, however, may be followed at a later period (either of only a few months or perhaps several years) by the fourth stage, which is known as the stage of tertiary symptoms. During this stage the lesions affect the deeper structures of the body, including any of the internal organs, muscles, bones, tendons, etc. The duration of this stage is extremely variable and may continue for years. In fatal cases it gradually merges into a stage wherein fatty and amyloid degeneration of the internal viscera may take place and a general syphilitic emaciation result.

The greatest distinction between the secondary and tertiary lesions of syphilis lies in the differences in structure, rather than in the periods when they develop. This because of the fact that the secondary lesions sometimes last only a few weeks and the tertiary lesions manifest themselves within a few months after the beginning of the disease, while in others it may be years before the tertiary lesions finally make their appearance. Then again, the symptoms which are manifest in the fourth stage are not inevitable, but occur only in a part of those cases which pass through the first three stages.

The Chancre or Primary Lesion—This primary lesion of syphilis develops usually within a few weeks after the inception of the syphilitic virus and it always develops at the point on the mucous membrane or the skin where the syphilitic virus first gained entrance. Between the time when the syphilitic virus is introduced and the chancre manifests itself, the disease is entirely latent and is classed as the incubation period. This period, as a rule, occupies about twenty-six days, but this is variable and it may be as few as ten or as many as fifty days.

When the chancre first appears it is in the form of a small, circumscribed redness, in the center of which there soon develops a reddish-brown papule. This lesion increases in size and after a time its surface becomes eroded and gives off a slight sero-purulent excretion, which dries and forms a crust upon reaching the surface. Occasionally the initial lesion undergoes no ulceration and no discharge is given off from it. The chancre in reality constitutes a neoplasm which infiltrates the surrounding tissue. As a rule, it is superficial, although cases are known where it involves the deeper tissues and when ulceration takes place, it leaves a cup-shaped depression or excavation.

The distinctive features of the initial lesion is that of induration and this factor manifests itself usually within seven to ten days after the appearance of the chancre. This degree of induration varies in different cases from that of a parchment-like thickening to the degree of a cartilaginous hardness.

The induration begins to disappear, as a rule, at about the fourth week and the lesion gradually becomes soft. In some cases this lesion remains as a hard nodular body, due to cicatrization, for months or even years, and thus is apparent in the second or third stages of the disease. Usually, however, the chancre heals within five or six weeks and leaves no trace except a brown colored spot, which gradually disappears as time progresses.

Location of the Chancre—The chancre may be located in any part of the body, but is most commonly found on the genital organs, in the mouth or on the breast. In the female, this initial lesion is usually found on the external generative organs, but it is not infrequent for them to appear on the uterine neck. It is seldom that they are seen on the vaginal wall, probably due to the fact that the secretion given off by the vaginal glands is a strong anti-toxin and serves to neutralize the effects of many abnormal materials.

Number of Chancres Possible—In a general way it is

stated that chancres occur singly while chancroids are multiple. This is not exact, however, as some cases are on record where a number of chancres have occurred upon certain individuals. A few cases have been reported where the number of chancres amounted to as high as nineteen or twenty, although this condition is an extremely rare one. When multiple chancres are present they are almost invariably due to the transmission of the virus through several abrasions on the skin or mucous membrane.

Syphilitic Bubo—The syphilitic bubo is the result of the transmission of the virus along the lymphatic channels from the original lesion to a lymphatic gland, together with a subluxation which affects the resistive power of the lymphatic glands which are nearest the chancre and through which the virus. The course whereby the virus has passed through the lymphatic channels is often traceable as a thickened, ridgelike cord along the course of lymphatic vessels. This process of transmission and affection of the lymphatic ducts and glands begins, as a rule, with the induration of the chancre and is usually perceived within two or three weeks following the appearance of the initial lesion. Naturally, the lymphatic glands which are nearest the chancre and through which the lymphatic vessels draining the chancre pass, are the first to be affected. This involvement later spreads to the other contiguous glands and ultimately the entire structure forms a conglomerative mass. The distinctive features of the bubo of syphilis are their indolence, their hardness and their mobility. They are not painful upon pressure, unless inflammatory changes have taken place in them, when this fact is distinguished by the redness of the skin over them.

Differences Between Chancre and Chancroid—The chancre, as a rule, is single, while the chancroid is multiple. As a rule the chancre returns but once and never reappears, while the chancroid may be manifest an indefinite number of times in the same person.

The chancre has a period of incubation lasting usually twenty-six days, while the chancroid has practically no period of incubation, manifesting itself as a rule within twenty-four or forty-eight hours after the introduction from the poison of chancroids. Usually the chancre occurs upon the genital organs, but it may be found on other cutaneous or mucous surfaces, while chancroids are found almost exclusively on the genital organs. A chancre appears as a small tubercle, round or oval in shape, while the chancroid begins as a vesico-pustule or ulcer, which rapidly displays irregular and jagged edges. The excretion given off from the chancre is scanty and serous in character, rarely purulent, while that of the chancroid is excessive and usually purulent.

The base of the chancre is indurated, giving rise to a nodular, cartilaginous appearance, which persists for several weeks. The chancroid, on the other hand, has a soft, pliable base, is not circumscribed and is of temporary duration. There is practically no pain with chancre unless inflammation is associated, while the chancroid is very sensitive and gives rise to sharp and severe pains. The bubo of chancre is almost always present and several glands, as a rule, are involved which are movable, hard and indolent; rarely suppurated. The bubo of chancroid is not always present, is usually single, inflamed, painful and discharges a muco-purulent excretion.

Secondary Incubation Period—During the first stage of the disease, the expression is limited to a local area and is always in the form of a chancre, with perhaps the association of the syphilitic bubo. It is during this stage that the syphilitic virus spreads throughout the system, invading the entire bodily structure through the serous channels, until its effect is manifested by eruptions occurring over the entire body. The disease is thought to become constitutional at the time these secondary eruptions make their appearance, but it is more probable that it becomes a constitutional disease long

before the secondary eruptions appear and that these secondary eruptions are merely the manifestation of the general condition. The secondary incubation period comprises that time which elapses between the first appearance of the chancre and the appearance of the secondary lesion. This occupies, as a rule, some six or seven weeks, but is extremely variable and may extend over a much longer period of time.

Before the secondary eruptions make their appearance there are certain constitutional changes which manifest themselves. One of these is in the increase in the white corpuscles and the albuminous elements of the blood, while there is a decrease in the number of red blood corpuscles. It is not unusual for the appearance of the secondary eruptions to be preceded by headache, pains in the lumbar region and lower limbs, and perhaps an increase in temperature. Women who are anemic are more apt to be affected by syphilitic fever. This fever is not distinctive, and it varies in type, duration and intensity. It may be remittent, intermittent or continuous, but as a rule shows exacerbations in the evenings or at night. This increase in the fever is usually associated with aching pain in the muscles and joints of the body, which are very similar to those of acute articular rheumatism. Usually of short duration, the fever subsides with the appearance of the secondary eruptions.

The pains which manifest themselves throughout the entire body, particularly in the muscles and joints, are peculiar in that they shift from place to place, but they nearly always show the common tendency to paroxysmal manifestations at night.

These constitutional symptoms are absent in a large proportion of cases and the first appreciable symptoms are those of the secondary eruptions themselves.

Characteristics of Syphilides—Syphilides are the eruptions which are found during the third and fourth stages of syphilis, upon the skin and mucous membrane and internal organs.

These eruptions are important in so far as they are the first visible evidence of the constitutional extent of the disease. In other words, they cannot appear until the entire system has been thoroughly saturated with syphilitic virus. It is true that as the virus permeates the entire system it produces organic lesions which disturb the functional activity of the various internal organs. Yet the most extensive manifestation is upon the external surface of the body.

The variations in the form of the eruptions during the third stage of syphilis is a distinctive feature of syphilis. While other eruptive incoordinations may develop in a very similar way, yet the fact that the syphilides are present in different forms at the same time is characteristic. It is very common to find macules, papules and pustules all present at the same time, despite the fact that they signify different stages in the course of the disease. This is because of the sluggish character of the incoordination and to the fact that successive crops of eruption occur intermittently.

The color of the eruptions in the third stage of syphilis is characteristic. They are of a dirty-brown or coppery color, although this color varies in different individuals, dependent upon the complexion and upon the texture of the skin. In the very early stages the eruptions are sometimes of a bright red or pinkish color, but later they become faded and usually before disappearing they take on the pale yellow or grayish color.

The individual lesions in the tertiary stage are circular in form, but they show a tendency to develop in curved lines, producing formations of arcs or segments of circles. In a general way the configuration follows the general outline of the capillaries in the region where they are developed, and thus we have the eruptions of the crescentic, the serpeginous and the horseshoe shapes.

The syphilides which develop in the early stages may be distributed over the entire surface of the body, yet in a general

way, the different forms are found in different locations upon the body. The erythematous or mocular syphilide is usually discovered upon the chest and trunk. The papular syphilide is found upon the face, margins of the scalp, the back of the neck, the trunk and the limbs. The pustular syphilides are found upon the surfaces which are supplied abundantly with hair and sebaceous follicles, upon the lower limbs, in the orifices of the body, particularly the nasal orifices and the genital orifice.

The scales or crusts of the syphilides are usually of the grayish-white, dull color, and they are thinner, more superficial and less abundant than those usually found in similar eruptions; these crusts, as a rule, float upon the pus which is present under them and are not firmly attached to the base of the lesion.

Ulcerations of the syphilides leave a margin which is perpendicular to the surface of the skin and which presents on its floor a grayish pseudo-membrane, which secretes a thick yellowish-green pus. Usually the lesion heals first on its concave border, while the ulcerative process is attacking the convex margin.

There are practically no pains and no subjective symptoms present with the syphilide. Pruritis is an unusual symptom, although it is sometimes present. The absence of puritis is thought to be the result of the slow indolent character of the eruption. When pruritis is present, it is more apt to affect the eruptions of the scalp and the genital organs than any other part of the body.

Classification of Syphilides—Various classifications are given for syphilides, but we will here use the simple classification into four main groups or divisions. They are: erythematous form, papular form, pustular form, tubercular form.

The Erythematous Syphilide—This is the earliest syphilide to make its appearance and is the most common. It is

also designated as the macular syphilide, the roseolar syphilide and is ordinarily situated on those parts of the body which are covered by the clothing. Because of this fact, because it is the most benign of all the syphilides and because it gives rise to no subjective symptoms, it often passes unnoticed. As a rule, these eruptions make their appearance in from seven to eight weeks after the appearance of the chancre. The two forms of the erythematous syphilide are the macular and the papular.

The macular form usually presents itself as a rounded or oval roseola, measuring from one-eighth to one-third of an inch in diameter. The edges are well defined and the color is at first of a bright red, but later takes on a yellowish color. After disappearing it leaves a brownish-gray spot upon the surface. These macules vary in number and size, being, in some cases, thickly placed, as are the macules of measles, while in other cases they are scattered over the surface of the body. They are particularly brought into prominence by the chilling of the surface of the body when they are brought into sharp contrast with the surrounding white skin. This eruption usually lasts two or three weeks, when it either disappears or merges into the papular form.

In the papular variety of the erythematous syphilide, the spots, instead of remaining smooth, are slightly elevated, are placed upon an erythematous base and are covered with very small scales. This papular form of the erythematous syphilide is really an exaggerated development of the macule and is usually found as an intermediate eruption between the macular syphilide and the papule.

The erythematous syphilide may occur in a number of successive crops during the first year and sometimes are found during the second year of the disease. However, as the macules recur, they become larger and less numerous.

The Papular Syphilide—This is the most important in the group of secondary eruptions and its appearance is usually

immediately following the erythematous syphilide or coincident with it. This eruption may continue to appear by successive crops during the entire secondary stage and perhaps into the tertiary stage when it may disappear or merge by gradual change into the papulo-tubercle.

The papules which present themselves as syphilides are circumscribed and are in the form of a solid papilla, varying in size from that of a pinhead to that of a grain of corn. They are seated upon an erythematous base and at first are of a bright red color, but afterwards become brown and leave a pale surface. This surface is at first smooth, but afterwards undergoes desquamation around its borders.

The distinctive features of this form of syphilide lie in the fact that it infiltrates the dermis and the epidermis; the fact that the cells of which it is composed fail to organize and undergo final destruction and the centrifugal course which the neoplasm follows in its development and destruction. These papules are hard because of the dense infiltration and are smooth and glistening because of the tension on the skin over them. The color is red because of the escape of blood into the tissues which form it and as the syphilide is destroyed the skin over it becomes loose and wrinkled. This papular syphilide may be distributed over the entire surface of the body. When found upon the general integument, the papules are dry and undergo desquamation, while if they are found on those parts of the body where numerous sebaceous and hair follicles exist, they become scabby. In certain regions where they are apt to undergo friction they are moist and are classified as moist papules. The eruptions which are classified under the head of the papular syphilide are known as: The miliary papule, the lenticular papule, the squamous papule, the moist papule (the mucous patch).

Of these different varieties sometimes one alone appears, and sometimes all appear simultaneously.

Pustular Syphilides—This is a term used to express a

type of syphilide found in the second eruption stage and has been variously described by different authorities. The different names which have been given to distinguish the different forms of pustular syphilide are: herpetiform, eczematous, varicelliform, variolaform, acneiform, impetiginous, ecthymatous, rupial, and pemphigoid syphilides. They are so named because of the resemblance which they bear to the simple dermatoses of other forms.

Many authorities have classified vesicular syphilides as a separate form, but they are here considered with the pustular syphilides. This, for the reason that even though the pustular syphilides are preceded by the vesicular form, the stage wherein they are known as vesicles is extremely transitory. Most of the pustular lesions were at one time papular in character and they pass rapidly from the papular form into the pustular form, usually through an intermediary stage, known as the vesicular. If the pustular syphilide is not developed from the papular base, it is developed from the coppery spot which remains as the result of the erythematous or papular syphilide.

The pustular lesions are more commonly found in those individuals who are weak and debilitated and if cachexia exists from the beginning, the pustules may make their appearance without being preceded by either the erythematous or the papular lesions.

The Tubercular Syphilide—The secondary and tertiary stages of syphilis are distinguished by the fact that they possess different types of eruptions. The tubercle and the gumma are distinctive as the lesions of tertiary syphilis and the tertiary stage is said to make its appearance when the tubercle or the gumma manifests itself.

The tubercle is a circumscribed structure which infiltrates and develops within the skin or mucous membrane, but does not extend into the subcutaneous or the submucous tissues. In a general way it may be stated that tubercles present them-

selves in an exaggerated form of the papules except that they are larger, more globular and firmer in texture. Further, the tubercle is more deeply seated than is the papular eruption. Again the tubercle usually undergoes ulcerative changes, while the papule disappears by resolution. The syphilitic tubercles are most apt to appear on the face near the alae of the nose, the forehead, the lips and the ears. The back of the neck, shoulders and inferior extremities are also common seats for these lesions, although they may be found upon any part of the body.

The tubercular syphilide is a small, round tumor, of a brownish or coppery color and varying in size from one-fourth of an inch to three-fourths of an inch in diameter. They may develop in groups or they may be isolated. When they occur in groups it is usually in the form of curved lines and as the tubercles disappear through suppuration, new lesions make their appearance at the peripheries of the configurations. The course of the tubercular syphilide is chronic in character and may extend over a period of months or even years. Because of the different methods whereby they undergo involution they are classified under two groups, viz: the dry or atrophic group and the ulcerative group.

The dry syphilide occurs comparatively early, sometimes during the second year, although more often it makes its appearance between the third and the sixth year or later. In a general way it may be stated that if the tubercular lesions are small, they are numerous, while if they are larger in size they are fewer in number. The dry form of tubercular syphilide is most often found upon the face and after a number of them have made their appearance they leave a diffuse nodular infiltration together with a thickening of the skin, which gives rise to the appearance known as leontiasis. In this type of syphilide resolution takes place by means of fatty degeneration and as this process continues, the nodules become more flat, softer and finally disappear, leaving a grayish spot,

which undergoes desquamation and later has the appearance of a white cicatrix.

In the ulcerative group of tubercular syphilides we find that the distinctive features are the softening and ulceration of the lesion. The distinction between this form and the dry tubercular syphilide is in the latter stages, rather than in the early stages. The tumor begins to soften at the center, while the skin which covers it becomes thin and ultimately breaks through, disclosing an underlying open ulcer. This ulcer discharges a grayish-yellow exudate, which dries in the form of yellowish crusts. Various forms of cicatrices are left on the skin as the result of the extent to which the ulceration progresses. This form of syphilitic lesion usually manifests itself from the third to the twentieth year after the origin of the disease. The most common location for the ulcerative tubercle is on the face, although it may be found upon any part of the body. When this form of lesion is situated upon the nose or in the nasal mucous membrane, it often destroys the soft tissues and the cartilaginous structures, producing more or less deformity. Usually when a tubercle begins to ulcerate it produces a crust and remains stationary in this stage for a time when it begins to enlarge by infiltration and thus spread to a wider area. This process of concentric destruction may continue for long periods of time. The majority of ulcerative tubercles are grouped in a circular formation, the center of which first undergoes ulcerative changes which slowly progress toward the extremities. The edges of the ulceration are usually perpendicular and the floor is covered with a grayish mass of disintegrated tissue, which gives off a thick, greenish and offensive odor.

Gummous Syphilide—This form of syphilide is the last to develop, as well as the rarest manifestation of syphilis. Many cases exist where it never develops, and when it does make its appearance, it is rarely before the fourth year and sometimes as late as forty years after the appearance of

the chancre. This syphilide is deeply situated in the subcutaneous and submucous tissues or in the muscles, bones or viscera of the body. The skin is never directly involved by the growth of the gummous syphilide and glides easily over this infiltrated mass. It is only when the gumma undergoes secondary changes and becomes ulcerated that the skin becomes involved by extension. This form of syphilide is found principally around the ankles, but it is also found on any other portion of the body.

These tumors are solid and usually globular in shape, varying in size from one-fourth of an inch to several inches in diameter. Ordinarily, however, they attain a size of about one inch in diameter. Usually few in number, cases have been recorded in which they have been very numerous. They are very slow in their development and show no tenderness upon pressure.

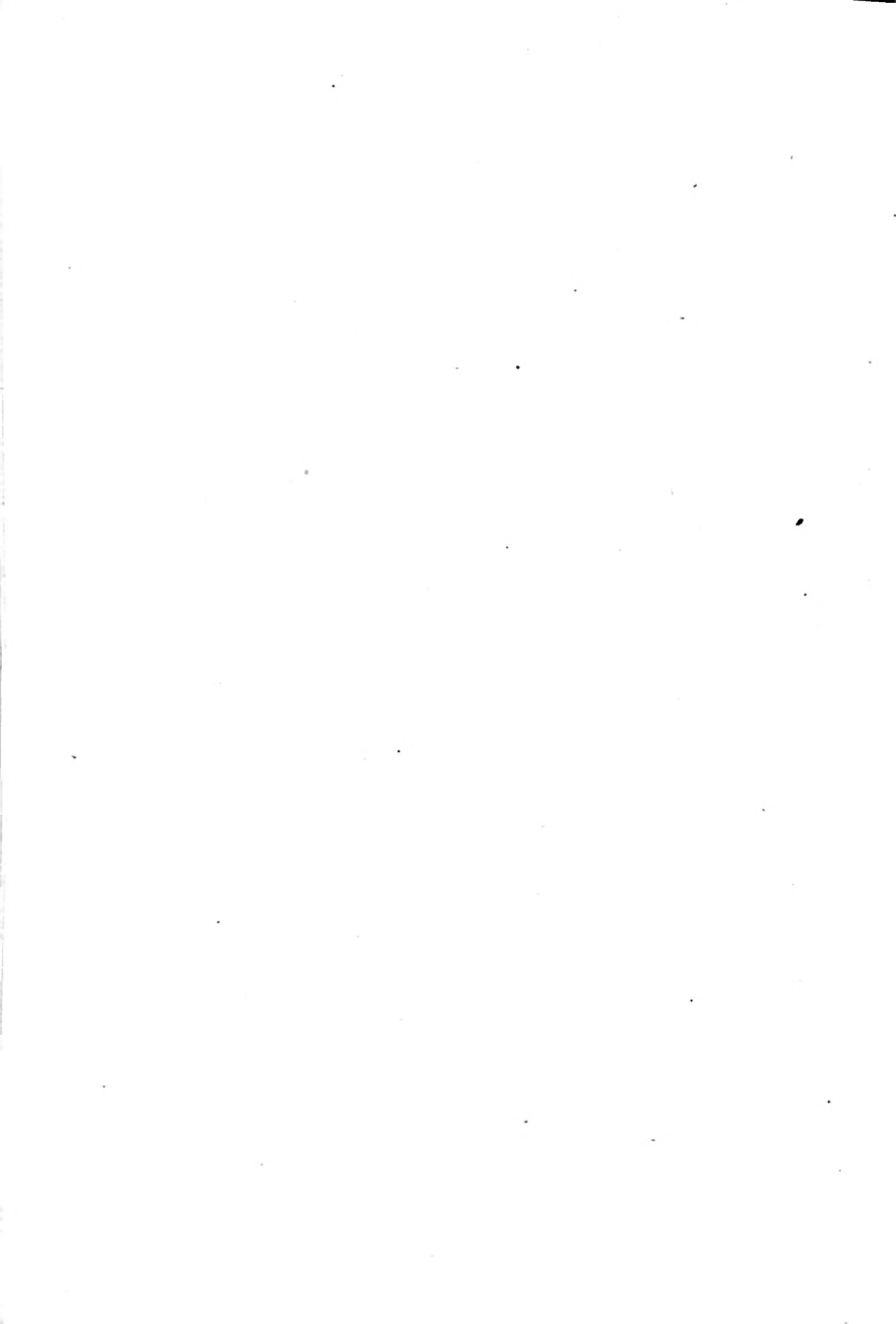
They undergo resolution, either by direct absorption or by ulceration, although the latter is the most common.

After ulceration takes place the process of reparation occurs wherein the grayish floor and the products of disintegration disappear and the ulceration is covered by healthy granulations. The resulting cicatrix is white in color, smooth, and shows a distinct depression dependent upon the depth to which the ulcerative process has progressed.

Prognosis—The prognosis of syphilis under adjustments is favorable. By the adjusting of the causative subluxations, the function of elimination is made normal and the syphilitic virus is thereby eliminated from the body. In the latter stages of the disease it is the presence of the syphilitic virus which produces structural changes in those tissues which are least able to withstand its influence. Thus it is that we have certain types of syphilides located on the face in some individuals, while they are located in other parts of the body in others. Thus, also, it is that in some individuals the effect of the virus is only sufficient to produce the erythematous syph-

ilides, while in others it produces the papular, pustular or tubercular. If the eliminative process is returned to the normal, then Innate is fully capable of throwing off the toxins and no expression of syphilis is present. Many cases are on record where a person comes in contact with the syphilitic virus, but does not suffer from the disease, thus showing that the function of excretion is normal in that person and the virus can have no effect.

It cannot be expected that the releasing of pressure on impinged nerves will rebuild normal tissues where the tissue centers have been destroyed, and for this reason the cicatrices always remain after having been once formed, even though the excretory function is normal.



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